ARUP

Unite Students and Travis Perkins Plc

Baltic Wharf Paddington

Transport Assessment Addendum

Reference: BW/TAA

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Job number 274835-00

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1. Introduction

1.1 Background

Ove Arup & Partners ('Arup') is commissioned to provide transport advice to support the redevelopment of the site at Travis Perkins, 149 Harrow Road, London W2 6NA ('Baltic Wharf', hereafter referred to as 'the Site').

This Transport Assessment Addendum (TAA) should be read in conjunction with the Transport Assessment (TA) submitted as part of the planning application (ref: 24/03600/FULL). The planning committee by Westminster City Council (WCC) refused the planning application on 21 January 2025. The application was subsequently 'called-in' on 24 March 2025 for determination by the Mayor of London.

This TAA provides an update to the TA to capture transport related elements of the application proposals that have been developed since the 24/03600/FULL planning submission. The revisions to the proposals have arisen as a response to matters raised by Greater London Authority (GLA) and Transport for London (TfL), following the recovery of the application. In particular, alterations to the application's transport strategy relate to correspondence received from TfL dated 11 August 2025 – see Appendix 1). This TAA has been prepared to support the call-in submission.

Pre-hearing meetings have been undertaken with the GLA and TfL on the dates below:

- GLA / TfL meeting: 12 June 2025
- First TfL catch up meeting: 14 August 2025
- Second TfL catch up meeting: 27 August 2025
- GLA /TfL meeting: 10 September 2025
- Third TfL catch up meeting: 17 September 2025
- Fourth TfL catch up meeting: 1 October 2025
- GLA/TfL meeting: 23 October 2025

All matters discussed in these meetings and any subsequent comments received from TfL (inc. TfL urban design, TfL Buses) were considered and reflected in this TAA.

1.2 Site location

The Site is located to the south of the A40 Westway and north of Paddington railway station. It is bordered by the A404 Harrow Road to the northeast, A4206 Bishop's Bridge Road to the southeast and faces the Grand Union Canal to the southwest.

At present, the Site is occupied by Travis Perkins (TP), which comprises of a builder's merchant with an ancillary office and associated branch elements as well as the service yard operation. The Site is fenced and gated on all boundaries. The site location is shown in Figure 1.

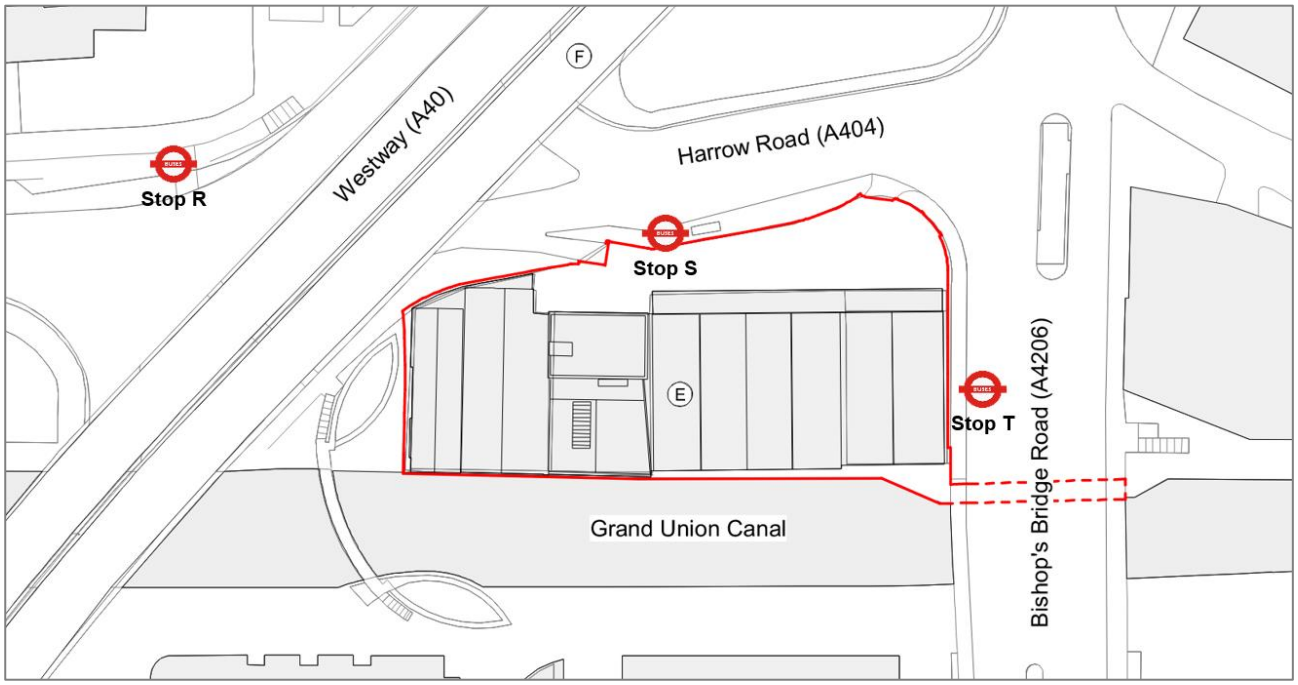


Figure 1: Site location plan

1.3 Development proposals

The proposed development comprises demolition of the existing Travis Perkins building(s) at 149-157 Harrow Road, and erection of a building (plus basement) between 4 and 20 storeys in height, comprising the reprovision of Travis Perkins builder's merchant (Sui Generis) at ground and mezzanine floor and the development of purpose-built student accommodation (Sui Generis) and community space (Sui Generis). Together with this building is the creation of a canal side path with landscaping and a retained gable wall end and other on-site public realm improvements.

The proposed development also includes provision of cycle parking and operational customer bays for the Travis Perkins builder's merchant. It also includes the installation of plant equipment and other associated works, including canal mooring improvements, as well as a new public walkway under Bishop's Bridge Road bridge.

1.4 Summary of TfL comments and responses

TfL's letter dated 11 August 2025 set out comments on various transport aspects of the proposed development. An overview of the comments and locations within this TAA in which they are addressed are set out in Table 1.

TfL comments	Responses
Required documents	Provided as appendices to this TAA. In addition to this TAA, these include the statement of operational support from Travis Perkins, and layout plans.
Existing environment explanation	Collision data detailed in **Section 3.2**. New survey analysis (TN02) is included in this TAA at **Appendix D**. Journey purpose data is included in the Trip Generation section at **Chapter 10**.
Letter of operational support	See discussion in **Section 3.1** and TP letter provided in full at **Appendix B**.
Highway environment concerns	Addressed in **Chapter 2** of this TAA; and refer to Drawing SK-64-F (**Appendix C**).

TfL comments	Responses
Access	Addressed in **Section 2.2**. Refer to **Chapter 5** on PBSA-related movements.
Public realm	Addressed in **Chapter 2** and refer to Drawing SK-64-F (**Appendix C**).
ATZ and women's safety	Addressed in Section **7.1**. The study conducted by Arup is shown in full at **Appendix F**.
Cycle parking	Addressed in **Chapter 9**. For details on the dockless e-bike / e-scooter management strategy, refer to **Chapter 8** and **Appendix C**.
Bus shelter	Addressed in **Section 2.4.1 and 2.4.2**.
Car parking	Survey analysis provided at **Section 3.1**.
Student servicing strategy	Addressed in **Chapter 6** for the proposed consolidation strategy. Addressed in **Chapter 8** and **Chapter 9** for cycle parking / cargo bike parking.
Travis Perkins servicing strategy	Addressed in **Chapter 4**.
Management measures	Extract of the Student Management Plan are provided at **Chapter 5**.
Trip generation	Addressed in **Chapter 10**.
Travel Plan	See Travel Plan for PBSA in **Chapter 11**.
Construction	Addressed in **Chapter 12** further details updates to the Construction Logistics Plan that was submitted as part of the planning application in 2024.

Table 1: TfL comments and sign-posts to Arup responses

1.5 Report structure

This chapter presents an introduction to the TAA, with the remainder of the report structured as follows:

- Chapter 2: Scheme design updates – outlines updates to the development proposals relating to the access / egress arrangements, public realm, active travel, public transport, and highways.
- Chapter 3: Travis Perkins operations and highways – discusses the observed and forecast vehicle queues for Travis Perkins operations and its impact to the highway network. It also summarises survey data for vehicle arrivals, departures, and pedestrian counts near the Site and provides an analysis of personal injuries as a result of collisions in the local area. The inclusion of an Operational Fund is also discussed in this chapter.
- Chapter 4: Travis Perkins servicing and gate management – outlines the proposed management strategy for the service yard for deliveries and servicing activity that may occur between 17:00 and 23:00.
- Chapter 5: Student management – sets out the move in move out arrangements.
- Chapter 6: Consolidated deliveries – outlines how parcel deliveries will be consolidated in efforts to reduce number of deliveries arriving at the Site.
- Chapter 7: Safety for women – discusses how the development contributes to the improvement of safety perception for the area, particularly for women and girls.
- Chapter 8: E-bike / E-scooter study – provides a background to the e-bike / e-scooter study undertaken to establish a baseline demand for dockless cycles / scooters in relation to the existing and potential expansion of cycle parking area at the Bishops Bridge Road refuge island.
- Chapter 9: Cycle parking – sets out the cycle parking proposal details and a lift breakdown resilience strategy.

- Chapter 10: Trip generation – sets out the multimodal and servicing trip generation and methodology for the proposed development.
- Chapter 11: Travel Plan – presents the Travel Plan for the PBSA including monitoring measures and inclusion of a Sustainable Travel Fund.
- Chapter 12: Construction Logistics Plan – provides further details on the logistics in relation to the demolition and construction activities, including bus stop closure period.

2. Scheme design updates

2.1 Overview

This Chapter details aspects of the proposed development that have been updated in response to consultations with TfL and the GLA. All improvements and details covered in the following paragraphs are shown in the highways general arrangement plan at Drawing 274835-42-SK-64-F (refer to Appendix 8) and the vehicle tracking drawing in Drawing 274835-42-SK-66-D (refer to Appendix C).

2.2 Site access

2.2.1 Cycle access strategy

The cycle strategy has been developed in consultation with TfL, illustrated by Figure 2 and in full in Drawing 274835-SK-64-F at Appendix C. The access arrangement remains consistent with the May 2024 application, i.e. a left turn into the junction access from Harrow Road. These include a marked entry lane for cyclists and couriers with left-turn road marking, entering and exiting the public realm in front of the proposed PBSA lobby via dropped kerbs.

Following a TfL preference to avoid directing exiting cyclists (which would also include couriers) across the Bishops Bridge Road footway, which formed the previous strategy, it is now proposed for cyclists / couriers to exit via a contraflow cycle lane exit (from the Site access). The contra-flow cycle lane would be safeguarded through the presence of a kerbed island with cyclist keep-left bollard.

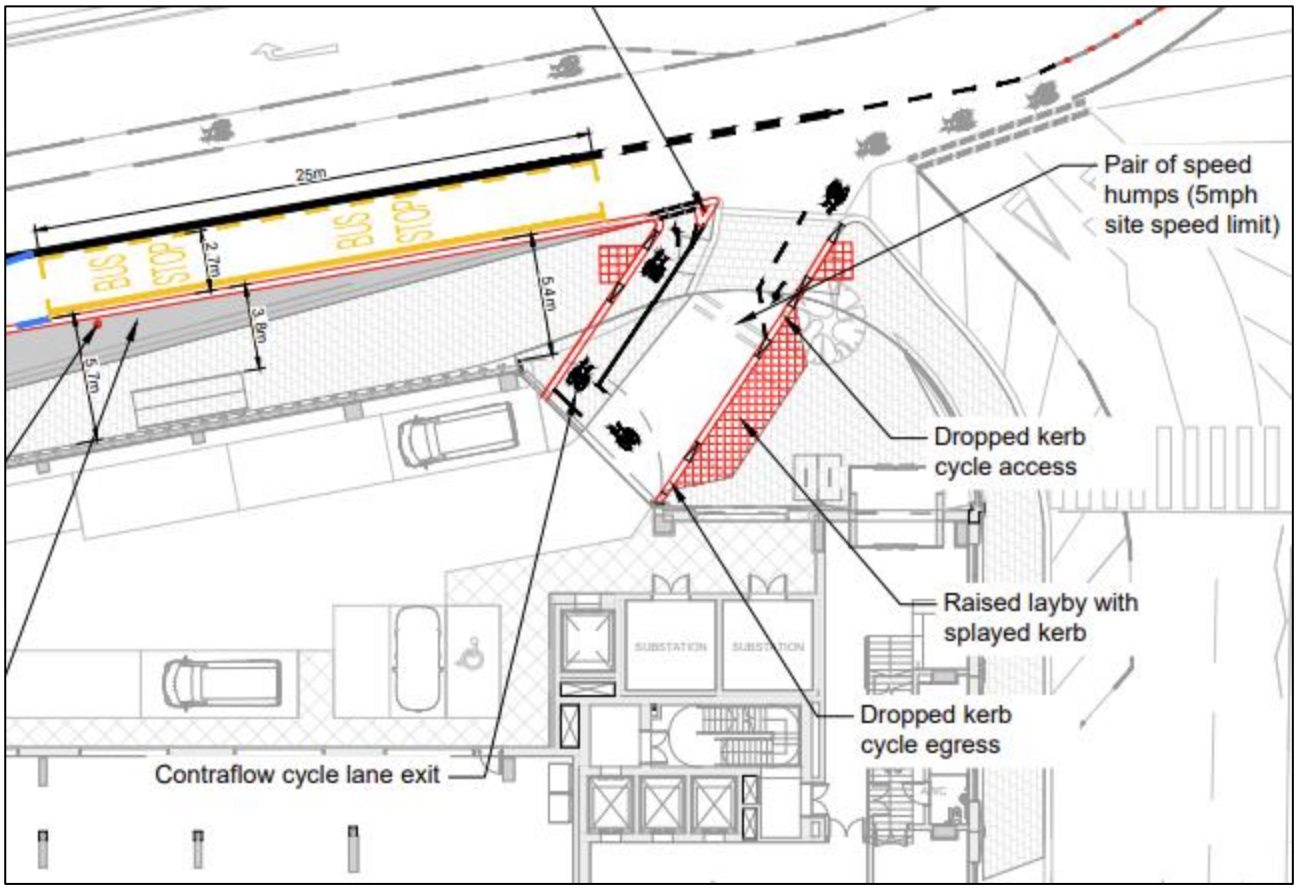


Figure 2: Site access improvements

Exiting cyclists / couriers would be guided across the vehicular access, from the PBSA public realm to the contraflow cycle exit. The cycle roundel serves to indicate to inbound vehicles that other road users may be present.

Speed humps are proposed to help enforce a 5mph site entry speed limit and emphasise activity such as cycle / courier crossing and taxi activity. The taxi layby is raised to the same level with the public realm with splayed kerb. This would act as an extension of the public realm for pedestrians / couriers when unoccupied by a vehicle. The swept path analysis for both the Site access and egress is shown in Figure 2 and in full within Drawing 274835-42-SK-66-D at Appendix C.

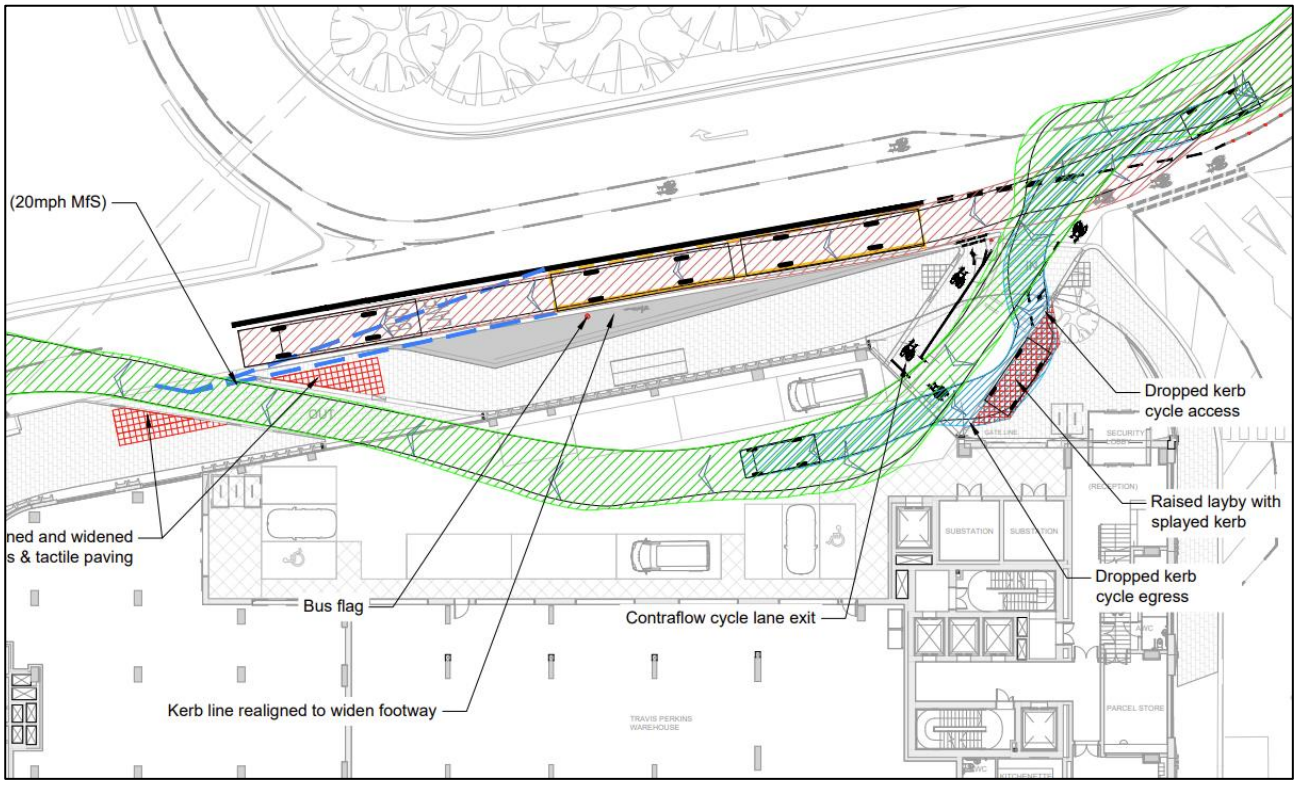


Figure 3: Swept path analysis - articulated vehicle and large car

2.3 Site egress

The proposals maintain the site egress strategy i.e.:

- Site egress is currently taken from Harrow Road to the north-west of the Site access. This location and alignment will be maintained.
- The diagonal wall will be removed and intermediate surfacing material used to emphasis pedestrian footway continuation.

The footway crossing proposal for the site's vehicular egress has been developed during the pre-hearing stage following TfL's comments. The dropped kerb crossing, with tactile paving, has been widened and re-aligned to better facilitate pedestrian movements. This is proposed with considerations for the visually impaired people that rely on the kerbline for navigation.

Figure 4 shows the proposed egress arrangements and visibility splays in line with Manual for Streets guidance and can be viewed in full in Drawing 274835-42-SK-64-F at Appendix C. The swept path analysis for both the Site access and egress is shown in Figure 4 (or Drawing 274835-42-SK-66-D at Appendix C).

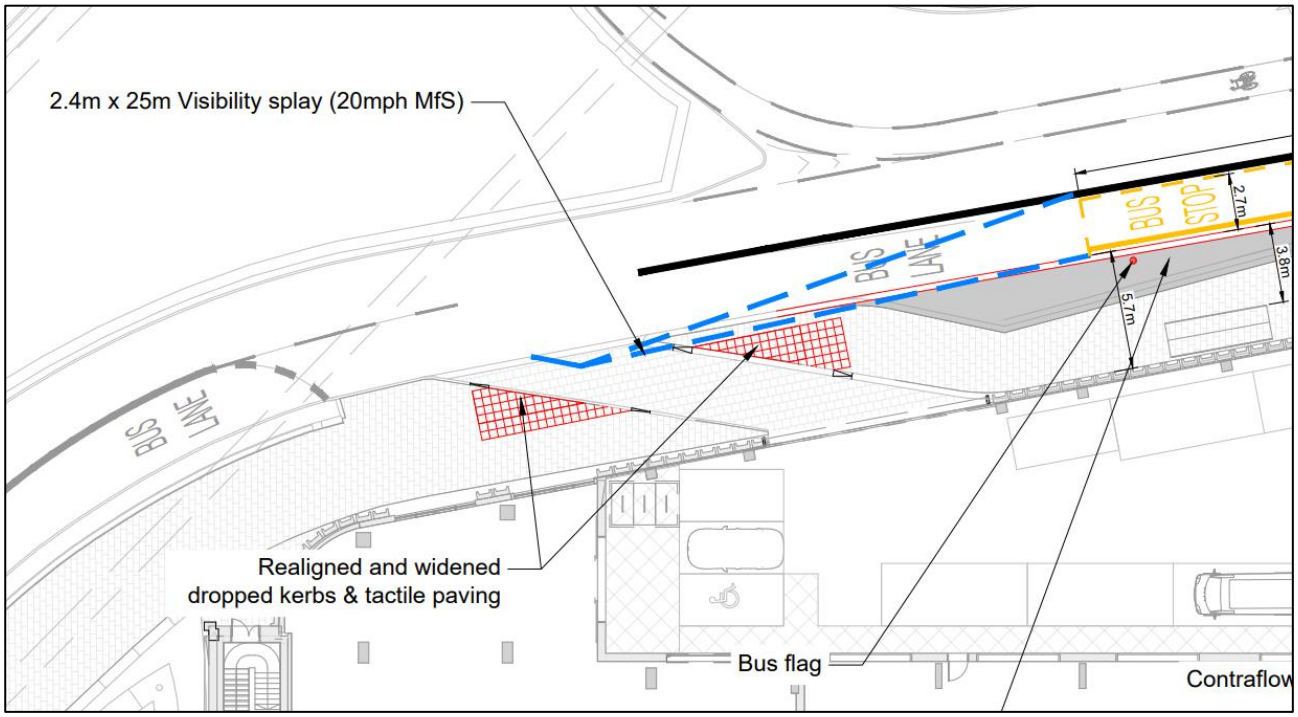


Figure 4: Site egress improvements

2.4 Proposed off-site highway improvements

The proposals include widening of pedestrian footway space along Harrow Road through a more congruous realignment of the kerb line. Refer to Drawing 274835-42-SK-64-F (see Appendix C) for the proposed off-site highway improvements. These works are to be included in a s278 application.

2.4.1 Proposed Harrow Road bus stop improvements (Stop S)

The existing bus shelter (Stop S as shown in Figure 1) continues to be proposed to be relocated to the back edge of the footway. This would provide improved footway space and better facilitate the pedestrian movements. The functional footway width and pedestrian desire line is currently restricted by the existing central bus shelter position.

The Stop S bus stop kerb line is also proposed to be realigned, as per TfL Buses advice, to provide additional footway and improve pulling in movement by buses into the cage, as illustrated in Figure 5. As agreed with TfL, the realigned bus cage width could be reduced to 2.7m.

Figure 5 shows an extract of the proposed bus stop changes and swept path analysis of a 12m electric bus pulling into the bus cage. The details are shown in Drawing 274835-42-SK-66-D at Appendix C. The detailed design (including the position of the bus flag) is to be agreed at detailed design stage.

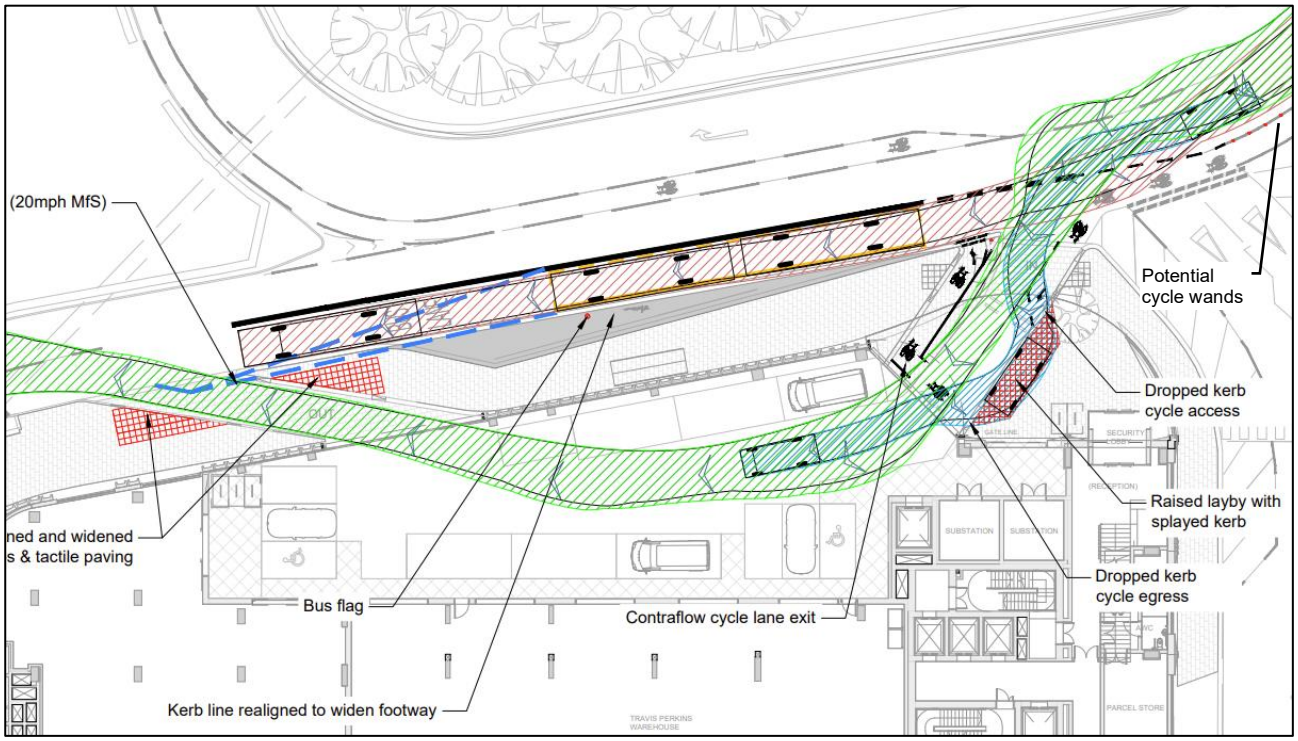


Figure 5: Swept path analysis – bus stop

2.4.2 Bus shelter upgrade

During pre-hearing stage, TfL suggested the potential for further upgrade to the bus stop on Harrow Road in incorporating additional 'innovative' features. This would consider measures suggested from the Arup Safety of Women and Girls Audit (August 2025), and may include clear glazed panel and realtime countdown. The Applicant would liaise with TfL at the detailed design stage on the final proposals for the bus shelter upgrade. The bus shelter upgrade would form part of the s278 works, to be agreed via Conditions (see Section 2.4).

2.5 Proposed public realm improvements

The Proposed Development comprises public realm improvements to the areas surrounding the Travis Perkins and PBSA buildings, as well as contribution to the TfL triangle land and Rembrandt Gardens.

Whilst the improvements to the triangle land, north of the site, outside the Porteus Road underpass did not formally form part of the planning application, the potential design was outlined in the submitted Design Access Statement (May 2024) prepared by Make Architects. During the pre-hearing discussion, the Applicant team has made further design changes in response to the GLA/TfL comments and the findings of the Arup Safety of Women and Girls Audit (August 2025, see Chapter 7 of this TAA).

The proposed upgrade to the public realm is anticipated to be implemented by a mix of s106 contribution and as part of the scheme delivery. Additional contributions to the wider area, in discussion with TfL during pre-hearing stage, has been considered and included as part of the 'Public Realm Fund'.

The key features to be delivered via Section 278 / Section 278 (through conditions) are as follows – and captured in the Section 278 plan shown in Figure 6:

- Minor making good / repairing works of footway along Harrow Road (including area along Porteous Road underpass up to canal) and Bishops Bridge Road – refer to Figure 6 for extent;
- Bus stop kerb alignment and footway expansion;
- Bus shelter relocation and bus shelter upgrade to TfL innovative team standard (detailed design to be determined);
- Installation of a new semi mature tree on Harrow Road to replace tree removed to facilitate build;

- Improved lighting and installation of new signage at Harrow Road junction with underpass;
- Enhanced lighting by addition of reflective cladding and lighting at Porteus Road underpass;
- Temporary works of Harrow Road cycle lane safeguarding (provision of cycle wands) – further discussed in subsequent section.

Other public realm works include:

- Soft landscaping at TfL triangle land (including planting throughout the central area and along existing elevation of underpass);
- Improving the space under Bishops Bridge Road bridge with art work and painting;
- Installation of a new semi mature tree within canalside seating area to replace tree removed to facilitate build;
- Resurface the area of paving alongside the canal up to the entrance of the underpass and to the threshold of the underside of the bridge; and
- Façade lighting on Bishops Bridge Road.

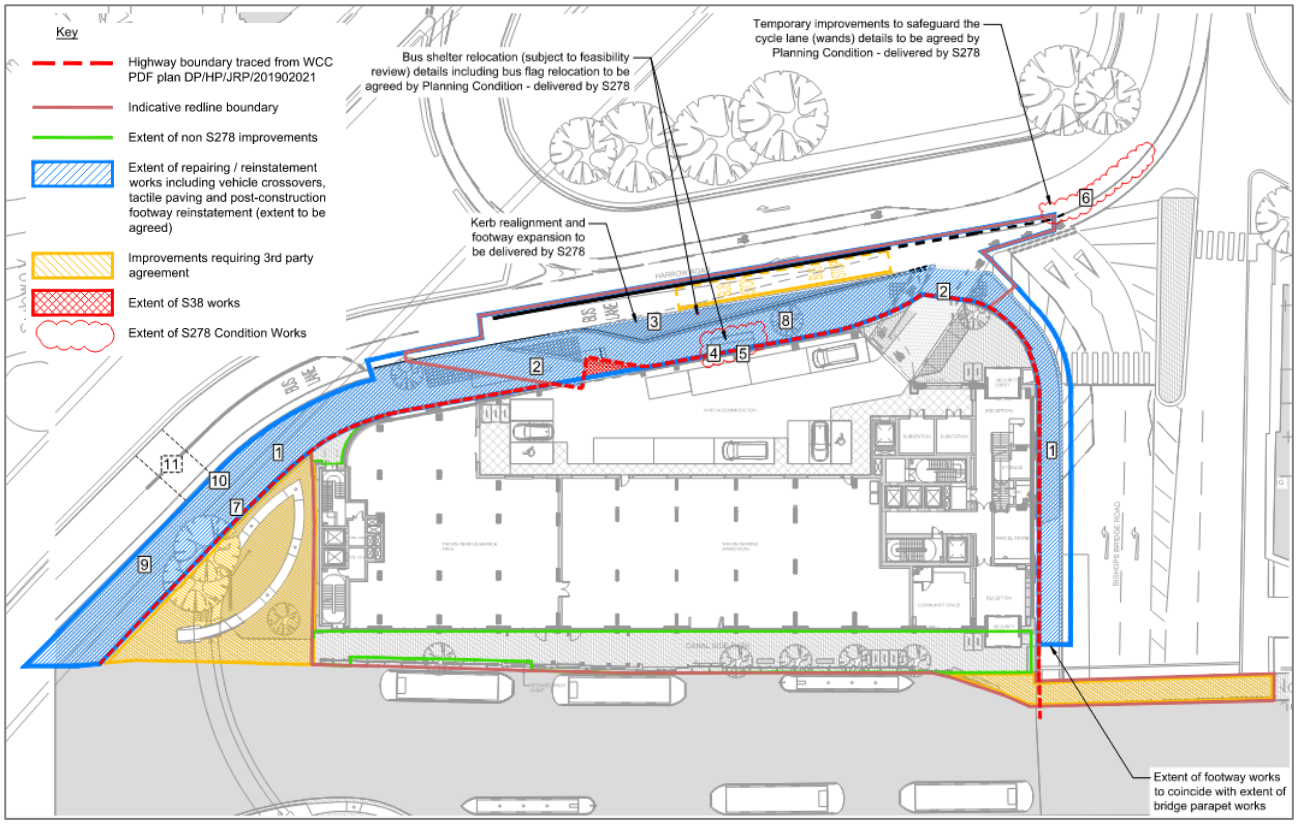


Figure 6: Section 278 plan

The Public Realm Fund includes contribution to removal / relocation of the existing bench opposite Brunel Building; and additional signage near Rembrandt Gardens.

2.6 Other indicative improvements

Additional temporary improvements have been discussed with TfL and WCC during the pre-hearing stage. These schemes consider further cyclist safety improvements on Harrow Road and providing additional dockless cycle storage space, prior to delivery of the WCC gyratory removal scheme. These potential additional interventions set out in this section have been reviewed by TfL and WCC and have been agreed to be shown as indicative design only at this stage.

The delivery of the cyclist safety temporary measure is to be secured Section 278 (via condition). Provision of additional dockless cycle storage space is not included in this application but has been reviewed, any future delivery is subject to agreement with WCC and TfL.

2.6.1 Temporary measures

TfL suggested temporary measures to be put in place to improve cyclist safety, ahead of the wider gyratory improvement scheme being developed by WCC. It has been observed that vans occasionally pull across to the site's builder's yard entrance too early, cutting across the cycle lane and occasionally waiting on the cycle lane. As such, temporary cycle wands are proposed to re-enforce the mandatory cycle lane for the bend at Harrow Road to the south-east of the Site access.

The proposed wands would be in keeping with the existing wands (shown in Figure 7) provided at the Harrow Road roundabout to the north-west and north of the Site. The proposed wands are shown in Figure 8 (refer to Drawing 274835-42-SK-64-F within Appendix C for full arrangements). The details of the wands design including length and position are to be conditioned.

Figure 7: Existing Harrow Road cycle wands

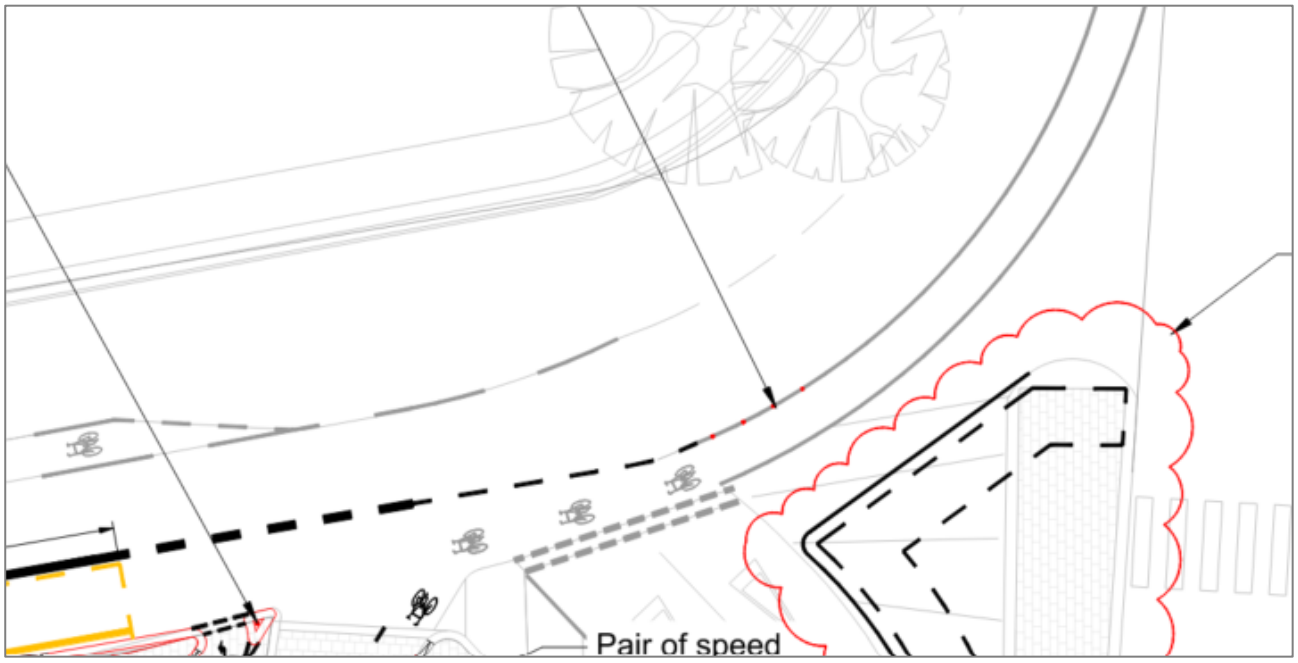


Figure 8: Proposed temporary cycle wands on Harrow Road

2.6.2 Pedestrian island on Bishop's Bridge Road

In response to TfL's request, a review to identify a suitable location near the Site for dockless e-bike parking and increase to the available storage capacity has been undertaken. This section presents a high-level review and identifies measures that could be implemented by WCC if additional capacity is needed.

The review identified the unused carriageway space adjacent to the pedestrian crossing island at Bishop's Bridge Road / Harrow Road junction, that is currently also used for e-bike storage (formal storage of approximately 12 e-bikes along the northern side of the island; with 10 further e-bikes observed being parked informally within the refuge island) – see Figure 9.

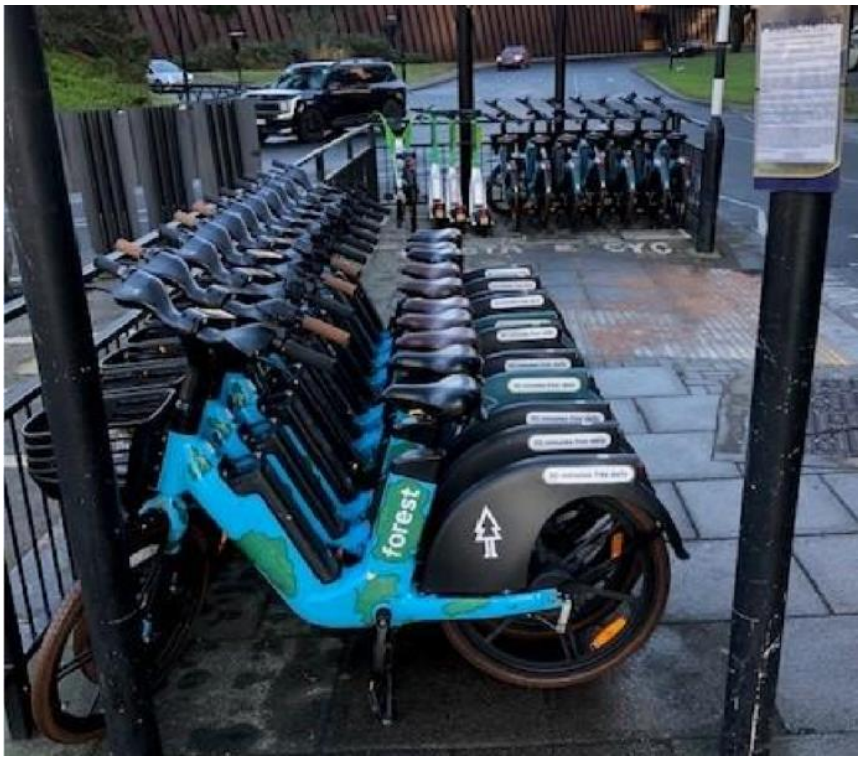


Figure 9: E-mobility parking on refuge island (formal and informal parking)

This unused carriageway space has already been identified as providing the potential to create a larger reconfigured island associated with the WCC Harrow Road Gyratory removal scheme shown in Figure 10. As such, the potential island expansion would be temporary in nature, with opportunities to provide more formal e-bike parking locations as part of the WCC gyratory removal scheme.

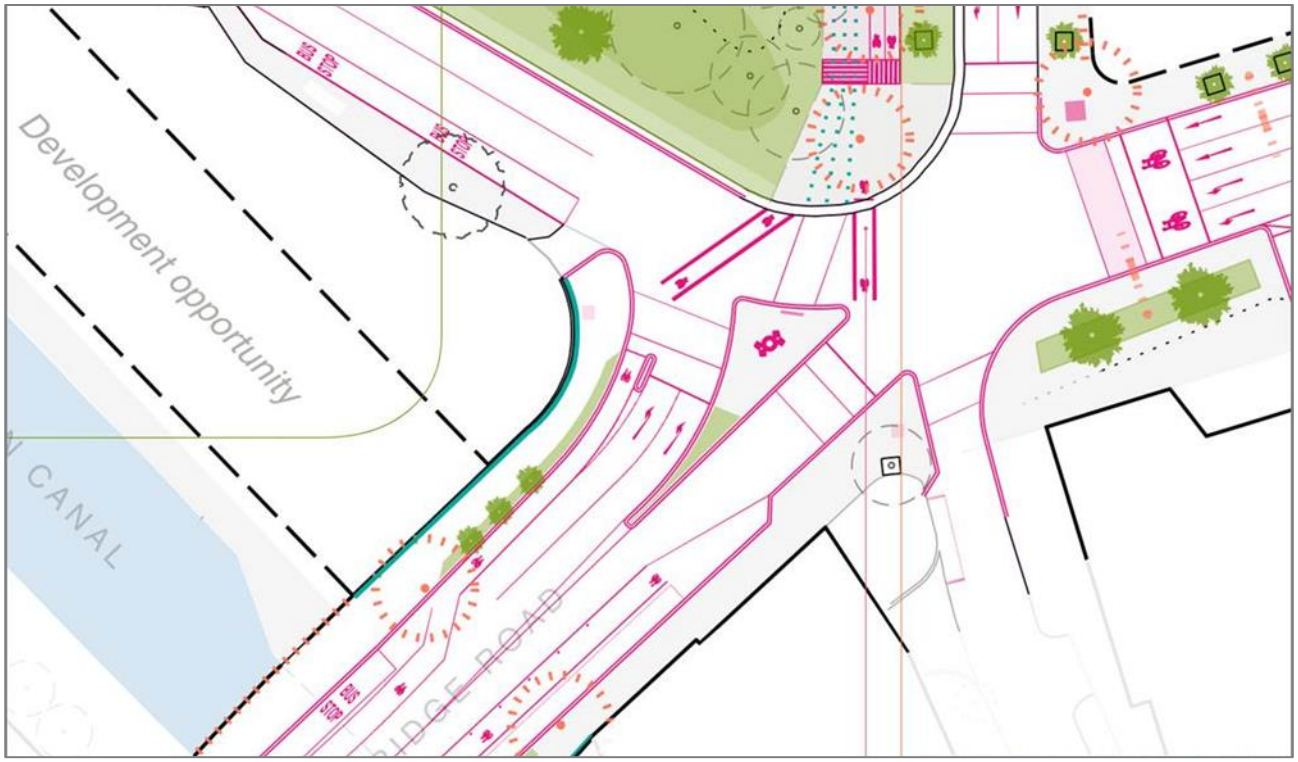


Figure 10: Extract from the Paddington Public Realm Strategy (Feb 2023) – prepared by 5th Studio

The potential expansion would take up the currently hatched area adjacent to the refuge island and provide for approximately 60 e-bikes to be formally stored within the temporarily expanded island area via a surface mounted solution (see Figure 11 and Drawing 274835-42-SK-67-A at Appendix C). This temporary provision would provide a circa five-fold capacity increase in formal cycle storage compared to the existing situation (or three-fold accounting for the informally parked e-bikes).

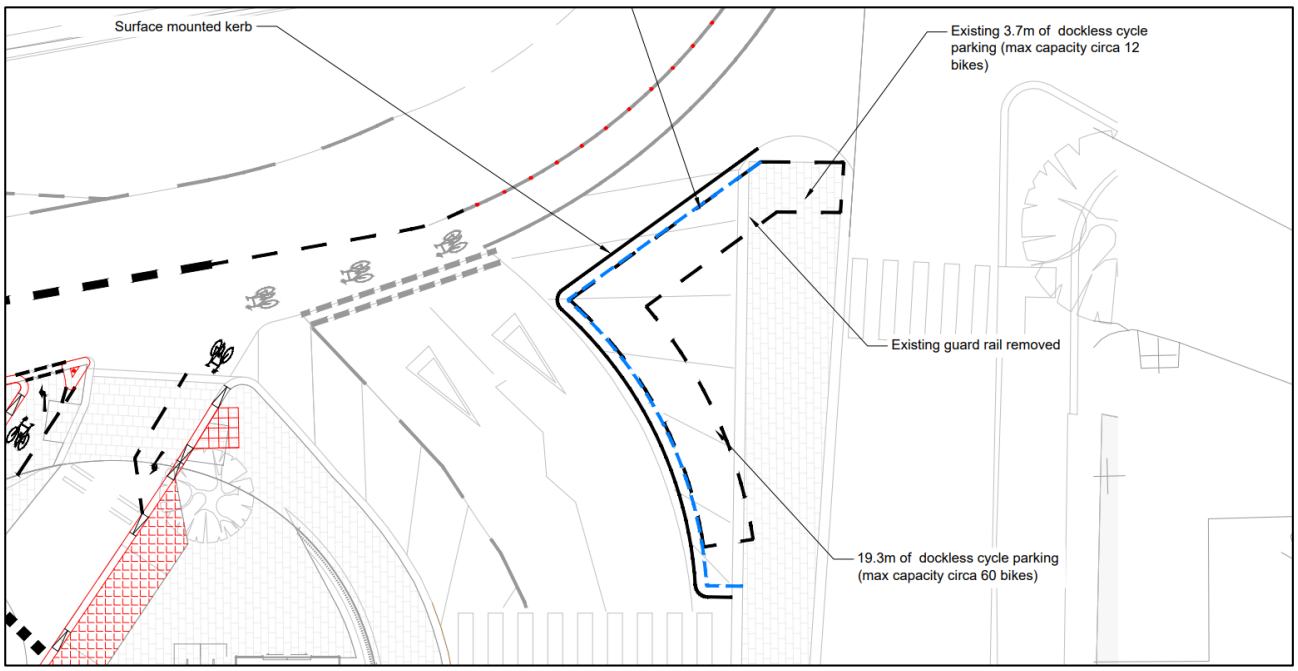


Figure 11: Potential expansion of refuge island

2.7 Stage 1 Road Safety Audit

A Stage 1 Road Safety Audit (RSA) has been undertaken in October 2025, in accordance with the TfL SQA-0170 procedure. The RSA reviewed:

- Proposed site access, including left turn cyclist / courier access, contraflow cyclist / courier exit
- Proposed site egress
- Bus stop kerb realignment on Harrow Road

The RSA found no problems in highways terms to the above proposals. The detailed RSA report can be found in Appendix G.

3. Travis Perkins operations and highways

3.1 Travis Perkins and highway queuing

The potential for the existing TP operations to cause the formation of highway queuing outside of the site has been raised by resident groups and TfL in the pre-hearing stage. During the pre-hearing period, the Applicant has liaised in detail with TfL to agree the existing operational factors that lead to instances of extensive queuing on the highway.

A study into the queuing causal factors is contained within Technical Note - TN02, contained within Appendix D. The study provides an overview of instances of queuing on street and the likely causal factors. In terms of an overview, queuing is caused by the deployment of a stop board at the entrance to the site. All vehicles are held at the stop board for yard vehicle management purposes, except for quieter times. This management allows TP staff to regulate access and understand the customer requirements and direct accordingly.

This vehicle management creates a short period of delay for incoming vehicles, however typically the vans can be permitted into the yard faster than the arrival rates, such that significant queues do not form. However, due to health and safety reasons, arriving vehicles sometimes need to be held at the stop board for a more protracted period. Where vehicles are held for protracted periods that co-incide with higher arrival rates, queues can form which extend into the highway; i.e. vehicles arrive at a faster rate than customers can be permitted into the yard.

As discussed in TN02, the most extensive periods of queuing co-incide with periods where inbound or outbound deliveries are being serviced by a forklift truck. For health and safety reasons customers are not permitted to access the yard during forklift truck activity leading to the protracted deployment of the stop board.

In order to understand whether the future TP modern facility associated with the application would lead to similar levels conditions where stop boards are deployed for protracted periods, TP has prepared an operational letter, 4 August 2025. TN02 considers the future TP site operations and whether the queuing causal factors associated with the existing site would apply to the future scheme or not.

In summary, the majority of the queuing causal factors would not apply in the future. The majority of which relate to the reduced branch profile, meaning that there would not be outbound TP customer deliveries and any inbound courier deliveries would be consolidated. These two primary factors would mean that the overall forklift truck movement would significantly reduce, precluding the need for protracted periods where the stop board is deployed at the site entrance.

Following the preparation of TN02, it is forecast that that only low levels of queuing would likely form in the future, with the application proposals facilitating significant betterment to the off-site highway conditions. No extensive queuing, that can presently occur, would likely occur following the scheme redevelopment.

Table 2 summarises the existing operations and how these can currently cause queuing into the site and how the proposed scheme would remove the queuing causal factor.

Key: Queue reduction factor Queue causal factor **Primary queue causal factor**

Ref no.	Aspect	Existing – daytime (7 am to 5pm) operations	Proposed – queue reducing / removing operations	Expected improvement – leading to reduced queuing
1	Reduced branch profile	32% business is outbound deliveries on TP lorries	0% outbound deliveries	Significantly fewer outbound vehicles per day holding inbound vehicles for protracted time period due to forklift truck movements.
2		Customers not directed to empty bays due to staff diverted to produce picking for outbound deliveries	All staff would be dedicated to fulfilment of customer collections	Inbound customer vans more readily directed to vacant bays reducing propensity to queue on street
3	Approach to deliveries / couriers and click and collect	Inbound deliveries between 0500 and 0700 hours and occasional deliveries during the day	All inbound deliveries completed before 7am	No need to restrict inbound access during the daytime due to inbound deliveries and forklift unloading
4		Inbound courier deliveries (up to ten per day)	Courrier deliveries to be consolidated at Queen Park branch, reducing unloading activity within the yard throughout the day	No need to restrict access during the daytime due to inbound courier deliveries and forklift unloading
5		Click and Collect	Click and Collect	Click and collect activity expected to increase from 10% to 25% of overall customer purchases. This would reduce customer dwell time and increase throughput.
6	Forklift activity	Inefficient layout requires product to stored at height – requiring forklift operations between the warehouse and customer vehicle.	Bulky materials held at low level requiring trolley access only.	No need to restrict inbound access during the daytime due forklift loading activities
7		Inefficient layout requires product to stored at height – requiring forklift operations between the warehouse and customer vehicle.	Fast selling products can be stored at low levels with trolley / hand transfer enabling faster customer servicing avoiding forklift operations	No need to restrict inbound access during the daytime due forklift loading activities
8	Yard designed to meet operational requirements	Bays suspended to store picked outbound materials	No outbound deliveries requiring temporary storage area	All bays would remain for customer servicing

Table 2: Summary of queuing casual factors – existing and future

3.1.1 Pedestrian counts

In the letter dated 11 Augusts 2025, TfL requested additional data on the pedestrian counts, to include the forecast PBSA peak hours. The directional pedestrian movements were captured as part of the new traffic surveys at two locations between 08:00-09:00, 13:00-14:00, and 17:00-18:00 across each of the survey days. Figure 12 shows the locations along the footway where the data was collected.

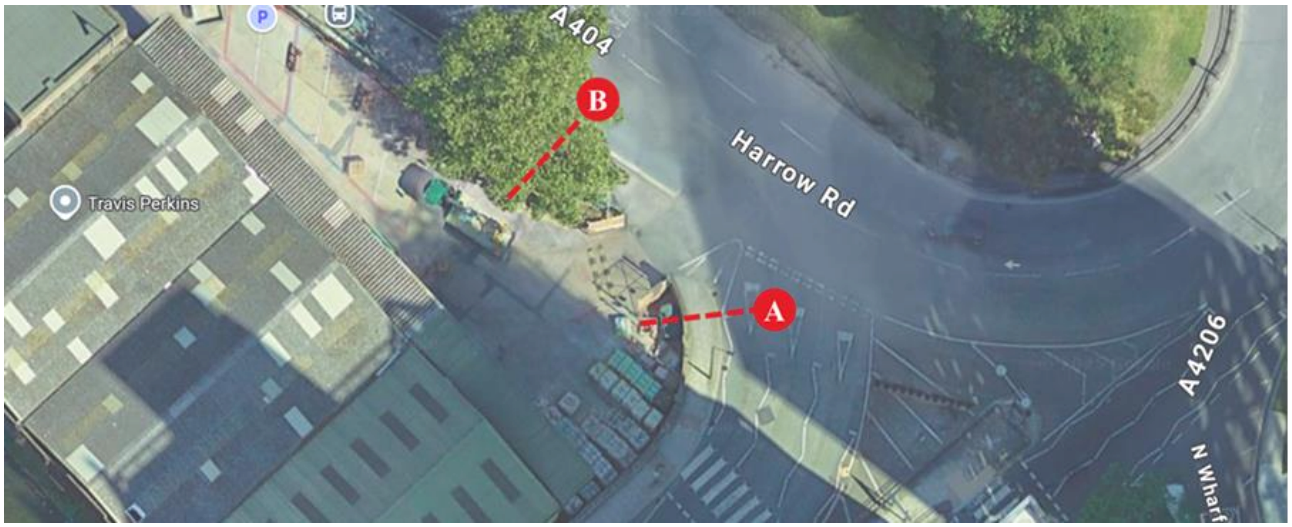


Figure 12: Pedestrian count locations

Due to LUL strike on Monday 8 September, pedestrian activity in central London may not be representative of normal conditions. Therefore, the data recorded on Thursday 4 September has been analysed. Table 3 provides a summary of two-way movements across both Point A (Bishops Bridge Road) and Point B (Harrow Road) during the three hours surveyed on Thursday 4 September.

Time	Thursday 4 September 2025	
	Point A (Bishops Bridge Road)	Point B (Harrow Road)
08:00-09:00	75	74
13:00-14:00	72	73
17:00-18:00	78	76
Average	**75**	**74**

Table 3: Pedestrian count summary

The summary shown above indicates an average of 75 pedestrians across Point A on Bishops Bridge Road and 74 pedestrians across Harrow Road at Point B at peak weekday times. This is equivalent to just over one pedestrian movement per minute, which is negligible in terms of Harrow Road and Bishsop Bridge Road footway capacity. As such, the spare capacity of these two surveyed locations is expected to provide adequate level of service following the additional demand from the Proposed Development. Footway capacity improvements would also be provided through the relocation of Bus Stop S on Harrow Road and footway widening associated with the bus kerb alignment.

3.2 Personal Injury Accidents (PIAs)

An analysis of Personal Injury Accidents was included in the submitted Transport Assessment. TfL requested further analysis of the PIA cluster, with a focus on vulnerable users. The PIA data from the submitted Transport Assessment has been further interrogated and detailed in this section. Noting some of the PIAs show 'no record' in the contributing factor from the police report, so the causes of PIAs are unknown.

Across the study period, there were 20 such incidents in proximity to the site – where 19 were slight collisions, and one was a serious collision. Of these, 9 involved cyclists, 1 involved a pedestrian, 7 involved motorcyclists and 3 involved cars drivers or passengers.

The causal factors recorded suggest that most of the PIAs were due to driver impairment or driver error. Only three were due to road environment (i.e. the road was slippery). It is noted that the road layout was not referenced as a causal factor. Table 4 summarises the extracts of incidents that involved motorcyclists (referred to as powered 2-wheelers), pedal cyclists, and pedestrians along Harrow Road and Bishops Bridge Road near the site.

ID	Collision Severity	Speed Limit	Road Surface Condition	Light conditions	Weather Details	Casualty Mode of Travel	Most Severe Injury	Factor Category	Contributory Factor	Contributory Factor ID
2	Slight	<= 20 MPH	Road-Dry	Daylight	Fine	Pedestrian	Shallow Cuts/Lacerations/Abrasions	Driver Injudicious Action	Disobeyed Pedestrian Crossing Facility	304
3	Slight	<= 20 MPH	Road-Wet	Daylight	Raining	Pedal Cycle	Sprains And Strains	No records	No records	0
5	Slight	30 MPH	Unknown (S/R)	Dark	Raining	Pedal Cycle	Other	No records	No records	0
7	Slight	<= 20 MPH	Road-Wet	Dark	Raining	Pedal Cycle	Bruising	No records	No records	0
8	Slight	30 MPH	Road-Dry	Daylight	Fine	Pedal Cycle	Whiplash Or Neck Pain	No records	No records	0
9	Slight	<= 20 MPH	Road-Dry	Daylight	Fine	Pedal Cycle	Sprains And Strains	Driver Error Or Reaction	Failed To Judge Other Person's Path Or Speed	406
12	Slight	<= 20 MPH	Road-Dry	Dark	Unknown	Pedal Cycle	Bruising	Driver Impairment Or Distraction	Cyclist Wearing Dark Clothing At Night	507
14	Slight	<= 20 MPH	Road-Dry	Dark	Fine	Pedal Cycle	Other	Driver Error Or Reaction	Junction Overshoot	401
18	Slight	30 MPH	Road-Dry	Daylight	Fine	Pedal Cycle	Bruising	No records	No records	0
19	Serious	30 MPH	Road-Wet	Dark	Raining	Pedal Cycle	Broken Neck or Back	Vehicle Defect	Defective Lights or Indicators	202
1	Slight	30 MPH	Road-Dry	Daylight	Fine	Powered 2 Wheeler	Sprains And Strains	No records	No records	0
4	Slight	30 MPH	Road-Dry	Dark	Raining	Powered 2 Wheeler	Shallow Cuts/Lacerations/Abrasions	Driver Impairment Or Distraction	Distraction In Vehicle	509
13	Slight	30 MPH	Unknown (S/R)	Daylight	Unknown	Powered 2 Wheeler	Bruising	No records	No records	0
15	Slight	30 MPH	Road-Dry	Daylight	Fine	Powered 2 Wheeler	Bruising	Driver Error Or Reaction	Failed To Judge Other Person’s Path or Speed	406
16	Slight	30 MPH	Road-Wet	Daylight	Other	Powered 2 Wheeler	Sprains And Strains	Road Environment	Slippery Road (Due To Weather)	103
17	Slight	<= 20 MPH	Road-Dry	Daylight	Fine	Powered 2 Wheeler	Other	Driver Behaviour or Inexperience	Aggressive Driving	601
20	Slight	<= 20 MPH	Road-Dry	Daylight	Fine	Powered 2 Wheeler	Bruising	No records	No records	0

Table 4: PIAs involving pedal cyclists, pedestrians and motorcyclists

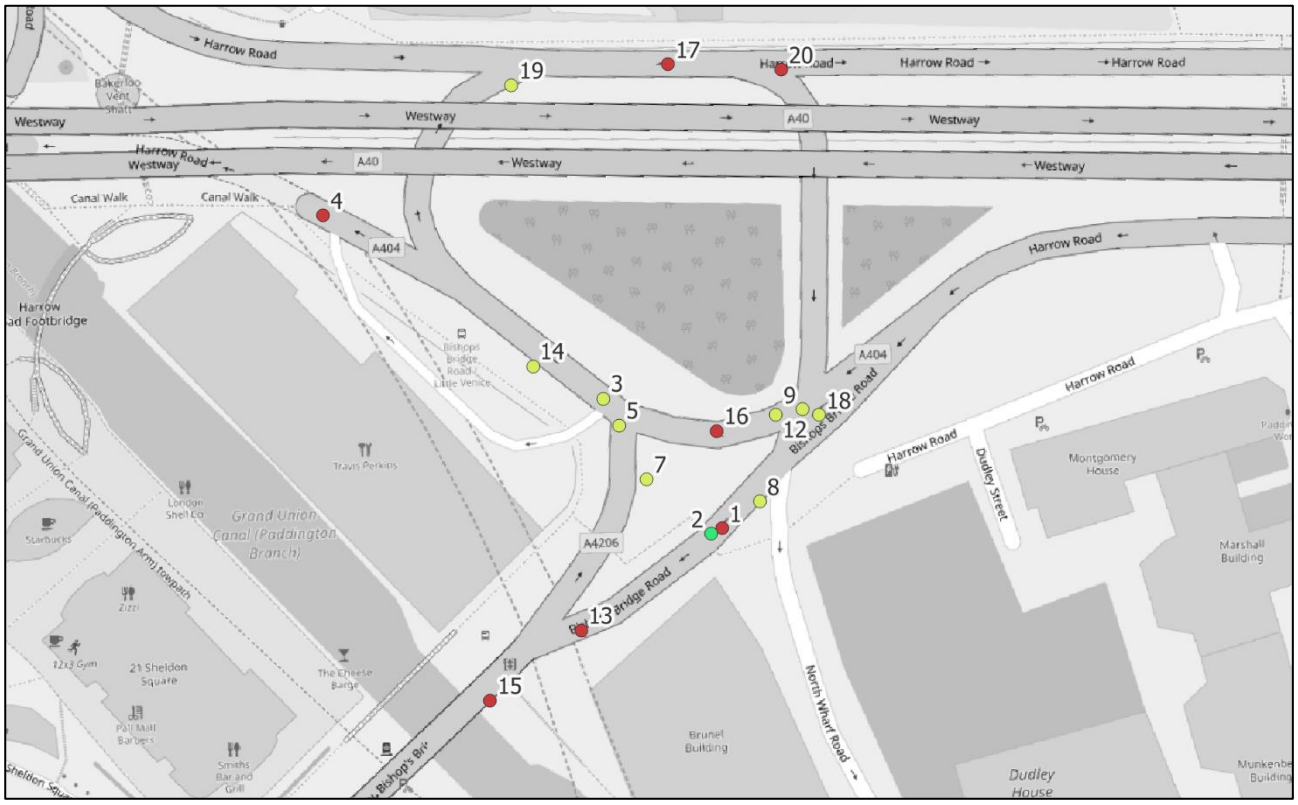


Figure 13: Collision IDs (reference to Table 4)

Improvements for cyclists as part of the scheme and the future cyclist upgrade to the WCC scheme should be accounted for. It is also worth noting that the HGV turning movements to and from the Site (associated with Travis Perkins operations) would reduce in number as a result of the redevelopment and proposed changes to the future Travis Perkins operations. These changes and improvements should provide benefits to cycle safety on the gyratory.

3.3 Operational Fund for Travis Perkins

During pre-hearing engagement with TfL, an Operational Fund of £50,000 has been agreed and secured for the first three years following first (re)occupation of TP. This Fund is anticipated to be used to mitigate and manage any issues post-TP occupation. Examples of monitoring and management measures could include camera enforcement to further ensure there is no queuing in the cycle lane, hatched area on Harrow Road and Bishops Bridge Road, or bus stop. The Fund and the monitoring measures would be managed through an Operational Management Plan, to be secured via Condition.

4. Travis Perkins servicing and gate management

4.1 Gate management between 17:00 and 23:00

In the letter dated 11 August 2025, TfL requested clarification on the operational arrangements for the TP yard between 17:00 and 23:00, including information on the type of deliveries that are expected during this period; access management when the shutter gate is closed, and strategy for signage and marshalling to prevent unauthorised access or confusion.

The activities expected by hours and locations are shown in Table 5. Specifically, between 17:00 and 23:00, the following activities are expected to take place within the service yard:

- PBSA non-perishable deliveries
- PBSA servicing
- Refuse collection for PBSA
- PBSA pick-up / drop-off for exiting vehicles only (vehicles are not expected to stop within the yard)
- Accessible car parking for the PBSA
- Travis Perkins pre-arranged deliveries (occasional)

Hours	Travis Perkins yard	Off-street drop-off space / courier delivery area
05:30-17:00 Monday to Friday 07:45-12:15 Saturday	TP-managed operations (for TP customers and deliveries) Refuse servicing (TP) PBSA consolidated deliveries (using the dedicated loading point within the TP yard) Accessible car parking	PBSA food deliveries and taxi pick-up / drop-off
17:00-23:00 Monday to Friday 12:15-23:00 Saturday 07:45-23:00 Sunday	Unite Students-managed PBSA non-perishable deliveries PBSA pick-up / drop-offs PBSA servicing vehicles TP deliveries in cordoned-off area between 17:00-20:00 Monday to Friday only Move-in / Move-out vehicles Refuse servicing (PBSA only) Accessible car parking	PBSA food deliveries and taxi pick-up / drop-off
23:00-05:30 daily	Closed for all deliveries except for PBSA emergency servicing and accessible car parking	PBSA food deliveries only. Taxis would not enter the drop-off space. Vehicles would pull adjacent to the Site's entrance but remain on Harrow Road.

Table 5: Summary of servicing arrangements at service yard

The gate operations by time period are set out in Table 6.

Time periods	Gate operations	Routings			Gate management		
		TP vehicles	PBSA servicing	PBSA taxis	Travis Perkins	Unite Students	Notes
TP operating hours 05:30-17:00	Gate would be fully opened	Vehicles would enter from Harrow Road and exit through the yard	Vans would enter from Harrow Road and exit through the yard	Taxis would use the layby and exit through the yard		N/A	TP staff would attend the yard and direct vehicles if required
TP out-of-hours 17:00-23:00	Gate would be unlocked but physically closed	Only pre-arranged vehicles would enter from Harrow Road and exit through the yard	Vans and refuse collection vehicle (RCV) would enter from Harrow Road and exit through the yard	Taxis would use the layby and exit through the yard	N/A		Unite Students Facility Management (FM) staff would have control of the gate. Staff stationed at the security room would have visibility of any incoming servicing vehicles and taxis. TP staff will be present to manage any out of hours deliveries.
TP out-of-hours Past 23:00	Gate would be fully shut and locked	None expected	None expected	Taxis would pull adjacent to the Site entrance but remain on Harrow Rd	N/A	N/A	Unite Students FM staff would oversee and monitor taxi arrivals and departures

Table 6: Gate operations and management

During operational hours, the Travis Perkins yard gate is fully open and is controlled and managed by the TP Site Manger or the on-site TP staff.

Between 17:00 and 23:00, the Travis Perkins yard would not be locked but would be physically closed. The responsibility for gate control and yard management will then be passed on to Unite Students. Most of the arrivals during this time period will be pre-booked and the Unite Students on-site staff will be made aware of these arranged arrivals (such as PBSA deliveries, move-in/out vehicles, or pre-arranged TP deliveries – See Section 4.2 for further discussion on TP deliveries). For non-booked arrivals during this period, such as taxi pick up / drop-offs, the Unite Students staff stationed in the reception will have full visibility of any incoming vehicle and can then open the gate taxis to exit through the yard.

Past 23:00, the yard gate will be fully shut and locked. Retractable bollards will be deployed to prevent any vehicles entering the site area inadvertently. Should there be a demand, taxis would stop prior to the bus cage adjacent to the gate access point. The presence of the bollard would serve to signal that taxis are not to enter the layby or the public realm area. This arrangement would ensure that taxis would not need to reverse onto the highway to exit the Site.

4.2 Travis Perkins deliveries

According to the Travis Perkins operational letter (dated 4 August 2025), all deliveries are expected to take place before 07:00. Any deliveries that are required after 17:00 would be subject to the presence of a Travis Perkins manager to manage the delivery and the entry / exit marshalling to and from the service yard.

This serves to provide delivery resilience should there be any deviations from the usual supply chain. Should this occur, measures will and pre-arranged, such that the gates / shutters can be opened in advance of the expected arrival time.

The Travis Perkins site manager would be present to prevent unauthorised access. Deliveries would only occur when there is site personnel present. The cordoned off area with swept path analysis is shown in Drawing SK-66-D (see Appendix C).

A Draft Delivery and Servicing Plan was prepared and submitted as part of the planning application. A Detailed Delivery and Servicing Plan will be secured by conditions, and will outline the detailed access control, and management arrangements.

5. Student management

TfL has requested further information on the move in / move out operations in the letter dated 11 August 2025. This section summarises the logistics arrangements for the move in / out activities and the student journeys. Further details on student management including check in procedures can be referred to the revised Student Management Plan produced by Unite Students.

5.1 Move-in / move-out operational process

The applicant and operator, Unite Students, has developed management procedures over 30 years with students and universities. These procedures have been informed through our experience in communities and discussion with students and student's parents. These processes include the complex, yet 'military' organised, 'check in' days and pre move in days, to ensure a smooth start to student living. The move in days will allow for contingency on time and waiting before the next arrival. The moving-in procedures are summarised below:

- Students to book a 30-minute timeslot for the desired day for moving in (via a dedicated website, or the Unite app). The timeslots will be outside of TP trading hours in evenings* or at weekends and evenings/ Unite Students will limit the maximum number of arrivals to 120 students per day. The number of slots available will be calculated based on the available parking space in the yard.
- Students to arrive on site at the allocated time / day, and will be met by traffic marshals.
- Students are to use the time allocated for dropping off belongings only, otherwise no parking is allowed on site. On-site personnel including off loading staff, luggage carriers, room coordinators are present to assist students unload quickly. Luggage / furniture trolleys will also be provided to support the student and their families. These would ensure the time between dropping off and another car arriving is kept as short as possible.
- If parents, after dropping off students, wish to return to the property to assist students unpack or tour around, they will be advised by traffic marshals of suitable locations to park nearby. For instance, indicatively, the APCOA Paddington Station car park.
- Traffic marshals would escort the cars to exit the site once drop off is complete.
- Based on experience from other PBSA sites, every drop off takes approximately 10-15 mins. A buffer time (for waiting / on time arrival delays) has been built in to the bookable timeslots to allow sufficient spare time until the next car is due.
- The site manager will oversee the move in operations, to ensure all the measures are in place to speed up the move in process, and attend to any routine maintenance, complaints and settling in concerns.

**Check in is permitted over a month period at the start of the tenancy period with 70% of students anticipated to arrive evenly over the three main check-in weekends. 30% of students are anticipated to arrive during weekdays.*

6. Consolidated deliveries

In the letter dated 11 August 2025, TfL requested further detail on the proposed consolidation strategy, including the name of the third-party operator, how deliveries will be scheduled and managed, and examples of where this approach has been successfully implemented at comparable sites.

6.1 Proposed servicing strategy

The proposed servicing strategy includes the use of an off-site consolidation centre for non-perishable deliveries, reducing the number of vehicles arriving at the site to three deliveries outside of the network peak hours (indicatively one in the morning, one at noon and one in the evening). The servicing trip generation presented in the submitted TA showed a reduction from 23 deliveries to three deliveries per day.

Figure 14 and Figure 15 show the delivery journey of non-perishable goods with the consolidated approach. Students are not expected to order any bulky items (bed frames, wardrobes, etc.) as the PBSA rooms are furnished.

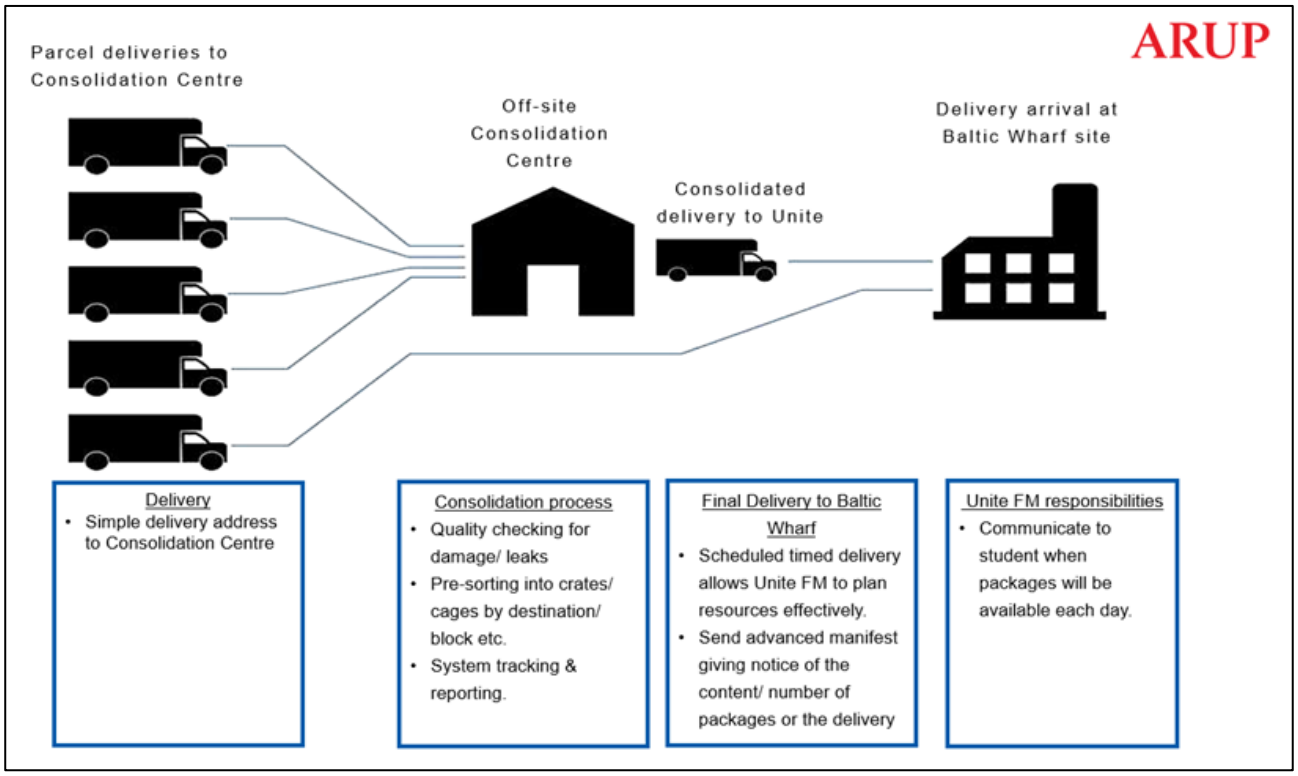


Figure 14: Delivery journey – consolidated approach

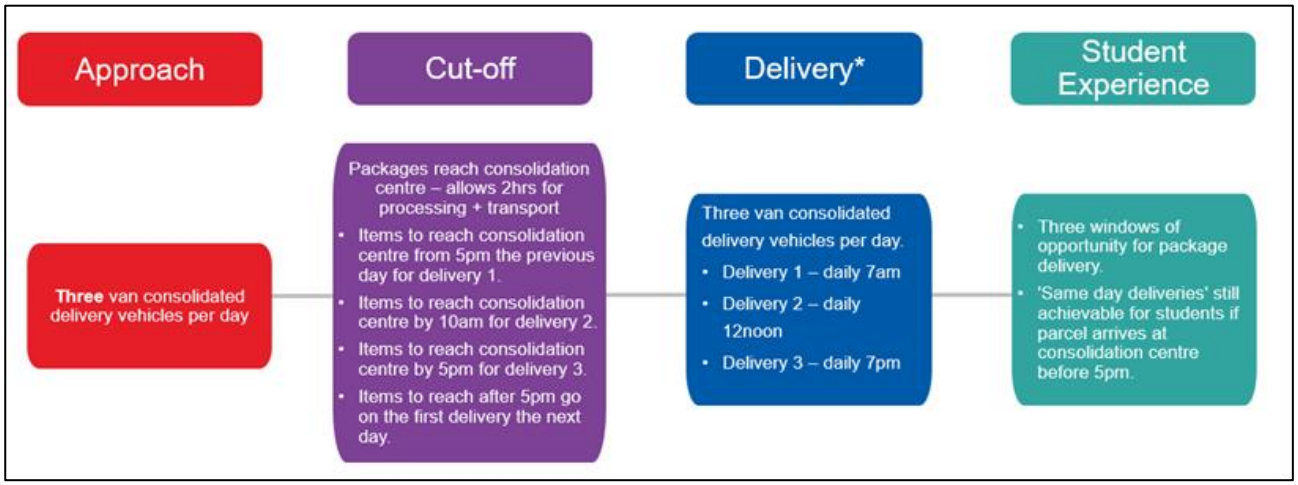


Figure 15: Delivery journey – cut-off and delivery timings

**Timings are indicative at this stage and seek to avoid network peak hour (evening delivery would be outside of Travis Perkins operational hour).*

The Applicant has not committed to a logistics partner at this stage. The Applicant would engage with the potential partner prior to completion of the scheme. However, to provide comfort to TfL, the following five companies that provide consolidation service have been identified:

- CEVA Logistics
- GXO
- Clipfine / Wincanton
- DHL
- Pedal Me

6.2 Case study

22 Bishopsgate in the City of London is a successful case study where consolidation approach has been adopted for a central London development to reduce the number of delivery trips. Section 106 legal agreements between developers and City of London Corporation secured the approach to limit the number of delivery vehicles and mandate the use of consolidation centres for large scale developments.

Although not the same land use, parallels can be drawn between this case study and PBSA operations. Similar to an office, PBSAs mandate specifics for inbound delivery arrangements, and a reception is in place to receive and hold all deliveries until collected by students.

For example, tenants at 22 Bishopsgate are notified to address all four-wheel deliveries or collections to an off-site consolidation centre in Borehamwood. The items are then organised and aggregated for batched delivery to the individual tenant's office.

The consolidation centre, operated by Clipfine, offers 24-hour package coverage which provides security and safety of any arriving deliveries. The consolidation centre streamlines the process with the use of:

- Stock management system to screen, scan, and tag all the items to organise deliveries to 22 Bishopsgate
- Delivery management system to manage the fleet of EV for deliveries based on the allocated dates and times – all to be tracked by GPS

The consolidation approach seeks to avoid organisational confusion by regulating site arrivals into the least deliveries possible. This minimises time wasted in accepting deliveries on-site and reduces congestion and the associated environmental impacts caused by a non-consolidated delivery approach.

6.3 Management and communication with students

Adopting a similar approach to 22 Bishopsgate, Unite Students is anticipated to notify students about the consolidated delivery procedures during site induction. A notice (or equivalent) would be produced and placed on notice boards or a shared intranet to include clear instructions on deliveries. Example text is shown below:

> *All deliveries and collection at Baltic Wharf Unite are subject to compliance with agreement with WCC and TfL. These are environmentally-focused measures to control the number of delivery vehicular movements and the arrival timings to minimise the number of vehicle trips and thereby reducing congestion and pollution in the area, whilst improving pedestrian and cyclist environment.*
>
> *Accordingly:*
>
> ***Deliveries of perishable items such as food deliveries / takeaways, are to be made directly to the reception.***
>
> *[Name of recipient]*
> *Unite Students - Baltic Wharf,*
> *Harrow Road,*
> *London,*
> *W2 6NA*
>
> ***Deliveries and collection of non-perishable items, such as parcels, Amazon orders, including those from international couriers, must be addressed to the off-site consolidation centre as below. From the consolidation centre, items will be aggregated for timed, daily delivery to the PBSA.***
>
> *[Name of recipient]*
> *Unite Students - Baltic Wharf,*
> *[Address of consolidation centre]*

Students will be notified that only non-perishable parcels via the consolidated operator would be accepted by the reception. The details of management and communication with students will be included in the Operational Strategy.

7. Safety for women

7.1 Background

The Mayor of London has made a commitment to improve safety for women and girls across the capital, as outlined in the Mayor's Violence Against Women and Girls (VAWG) Strategy (June 2022). The VAWG is underpinned by policies within the London Plan, including Policy D3 and D5 that promote inclusive, safe, and accessible public spaces, and Policy T2 on Healthy Streets. The proposed development responds positively to the Mayor's commitments and London Plan in relation to Women and Girls Safety.

As part of this Strategy, the Mayor is piloting five Women's Safety Audits across London. Paddington Green and Edgware Road – where the site neighbours – was selected as one of the pilot locations. The audit undertaken by 'We Made That' (an architecture and urban design studio based in London), was a participatory research in assessing the safety and security concerns of women in the local community. The audit aligns with the TfL Night-Time Guidance, which sets out key principles for ensuring safety and comfort for all users, particularly women and girls, during evening and night-time hours.

Day-time and night-time Healthy Streets Active Travel Zone (ATZ) assessments have been undertaken and included in the submitted Transport Assessment (2024) associated with the site's planning application. Noting the night-time ATZ assessment focused on routings to the key attractors to students that are in operation after dark. The assessment was conducted in line with the TfL Night Time Guidance and Mayor's commitment for women and girls to feel confident and welcoming travelling in London at night time as part of the VAWG strategy. Such guidance has been embedded into both the ATZ assessments and the scheme development.

In the pre-hearing stage, the Applicant has commissioned Arup to revisit the assessment of the current site surroundings and the development proposals through a lens of safety for women and girls, in response to TfL's comments and the We Made That Women's Safety Audit findings.

Arup, led by colleagues with expertise in Women and Girls Safety, completed a "Safety for Women and Girls Audit" in August 2025. This builds on the ATZ assessment submitted in the Transport Assessment, with the expanded scope to incorporate a Women's Safety focus.

As summarised in Figure 16, the Arup Audit (2025) included a literature review, including the GLA Women's night Safety Charter, WCC Women Safety Audit, Westminster City Plan and other best practice guidance including Arup's Cities Alive research. Day time and night time site visits were conducted which validated findings from We Made That audit, and identified additional areas for improvements (compared to the original application submission). The findings focused on (1) wayfinding – including sightline, signage and route options; (2) design – including lighting, function of the space, street quality; and (3) maintenance – including cleanliness and presence of passive surveillance.

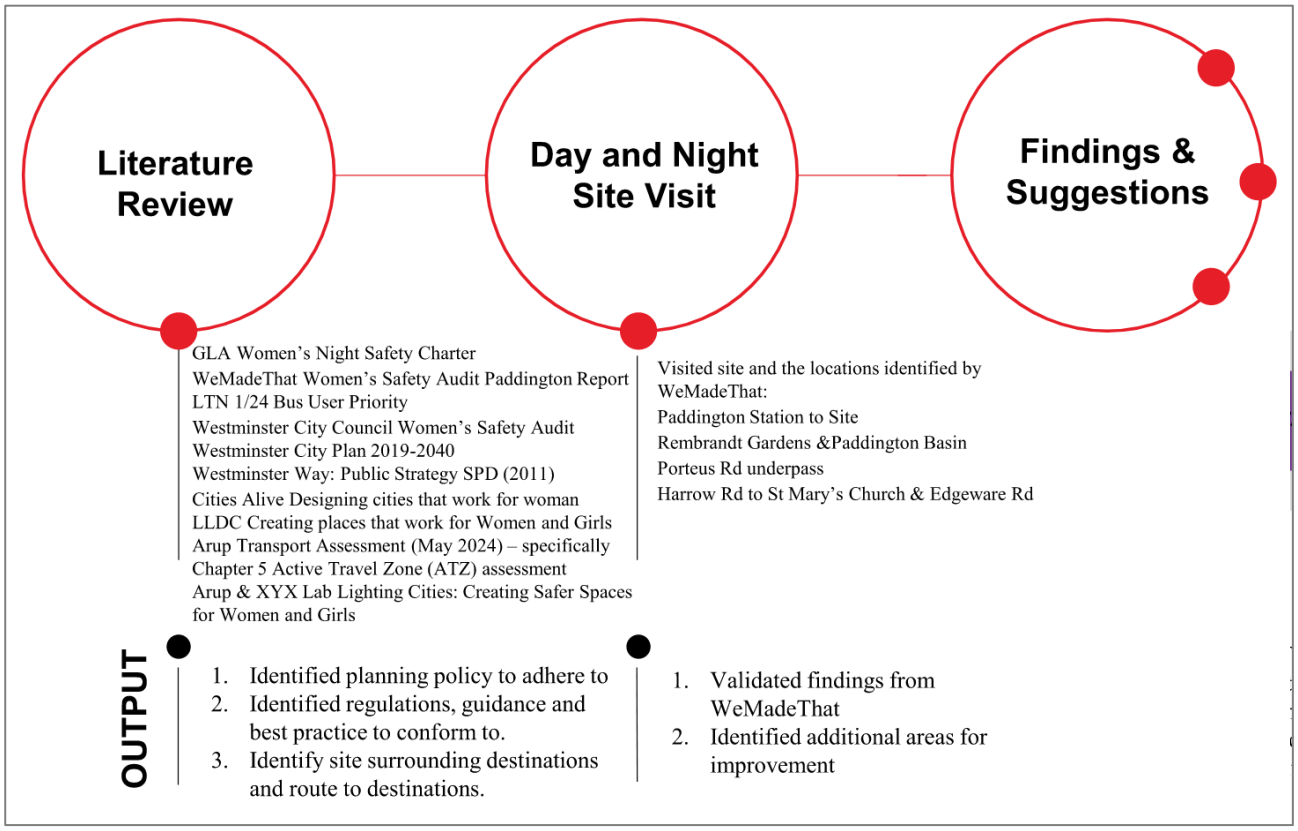


Figure 16: Safety for Women and Girls Audit – methodology

The Arup Safety for Women and Girls Audit (2025) reviewed the access / route choice for both day and night, effects of the continuous canal side walkway and increased footfall in the immediate surroundings – as shown in extract from Figure 17. The Audit also assessed the proposed public realm strategy and identified additional measures that be provided to enhance safety for women and girls; as well as the effect of integration of the proposed development to the wider area and the associated public benefits.

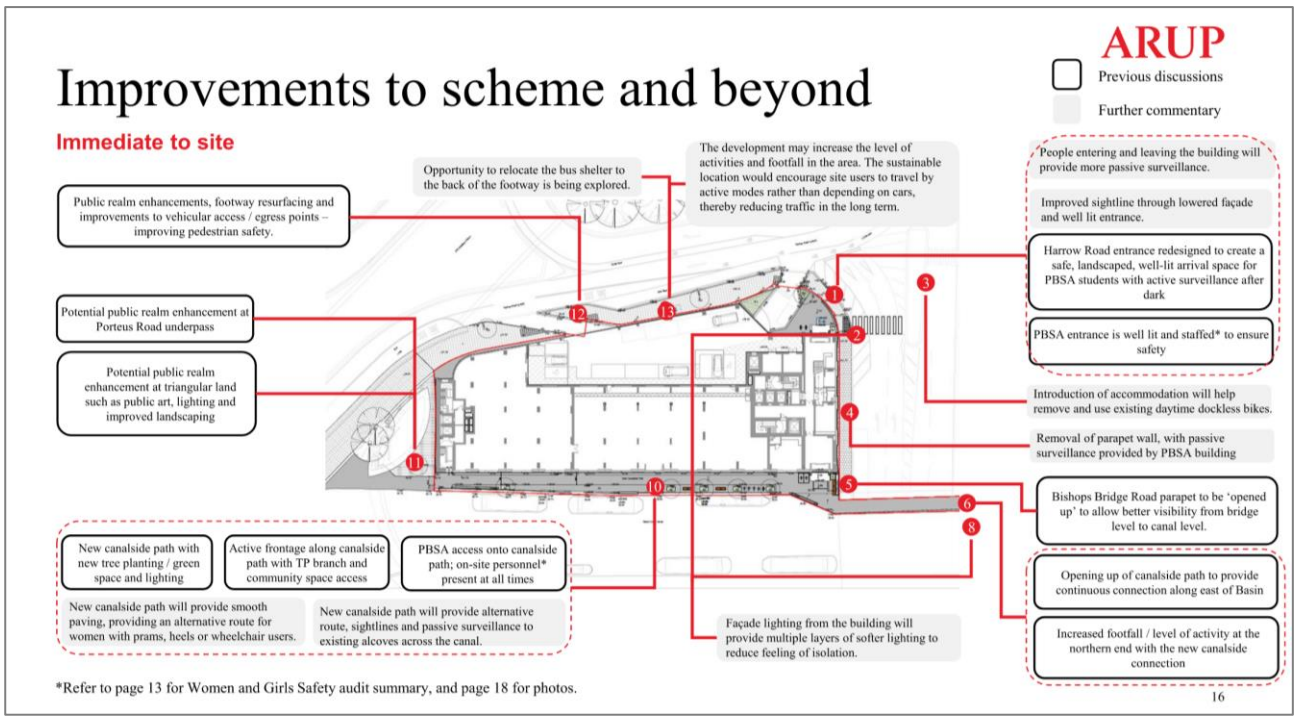


Figure 17: Extract from Arup Safety for Women and Girls Audit (2025) – review of proposed design

The recommendations of the Arup Safety for Women and Girls Audit (2025) were reviewed with the Applicant's design team and TfL. Some of the measures were incorporated into the revised public realm design (refer to Section 2.4); while others were included in the series of committed contributions. These measures include: improved lighting at Porteus Road underpass, improved surface treatment between canalside path and Porteus Road underpass and additional artwork under the Bishops Bridge Road bridge.. These enhancements aim to foster a more inclusive and welcoming environment, particularly during off-peak and night-time hours. The project team has engaged extensively with TfL throughout the process to ensure the audit findings have been meaningfully integrated into the design and delivery of the scheme.

In response to the findings and engagement with TfL, the Applicant has committed to signing up to the Mayor's Night Safety Charter, which includes providing training for on-site staff to support women's safety and respond appropriately to incidents.

The full report of the study can be found in Appendix E of this TAA.

8. E-bike / E-scooters study

8.1 Overview

In the letter dated 11 August 2025, TfL suggested that additional students on the site and the associated demand for dockless bikes could result in accidents and/or blocking of the pedestrian refuge island. TfL requested a robust dockless bike management strategy, including coordination with operators and WCC, to prevent obstruction of pedestrian routes.

An e-mobility demand associated with the proposed scheme has been undertaken, to understand the potential for the expansion of the existing refuge island and e-bike / e-scooter parking spaces at Bishops Bridge Road. The analysis found that PBSA typically functions as a trip origin for e-mobility users, contrasting with nearby employment or retail uses that act as destinations. This means that student journeys are likely to draw bikes and scooters away from the local area during the day, rather than increase local parking pressures.

Applying the established demand rates to the Proposed Development suggests a modest level of associated e-mobility parking, estimated at three to six e-bikes / e-scooters. While actual usage may be higher, this figure reflects expected parking demand only. Of this, one to two vehicles are likely to be e-scooters, which require less space than e-bikes.

Surveys of the local area indicate that parking demand for e-mobility peaks during the daytime, coinciding with activity linked to surrounding land uses such as offices or shops. In contrast, student demand expected during these same daytime periods would help to redistribute e-mobility rather than adding to parking zones.

WCC regulates e-mobility parking through a system of designated bays. E-mobility bays are located directly across from the Baltic Wharf site on Harrow Road. Sheffield stands are located along North Wharf Road. These spaces provide suitable capacity close to the Site and should help to prevent the informal accumulation of bikes or scooters within constrained areas (such as the site access).

As discussed in Section 2.6.2, this TAA includes a review on the potential expansion of the refuge island to extend the dockless cycle hire box provision via a temporary arrangement. The island could be expanded into the existing hatched area adjacent. The potential expansion of the refuge island is shown in Figure 11 and in full at Drawing SK-67-A in Appendix C. The proposed length of 19.3m can add approximately 60 additional formal parking spaces for hireable e-bikes. This would provide a circa five-fold capacity increase in formal cycle storage, or three-fold increase accounting for the informally parked e-bikes. The full E-bike / E-scooter study is shown at Appendix C.

9. Cycle parking

In the letter dated 11 August 2025, TfL requested clarification on the number and types of cycle parking provision; as well as cycle lift breakdown strategy. The proposed cycle parking for the Site is shown in Table 7 and covers the number of cycle parking spaces and intended users by floor.

Floors	No. of cycle parking spaces	Users
PBSA		
Ground floor	15 short-stay (Sheffield stands)	PBSA visitors
Level 01	364 long-stay (two-tier) 22 long-stay (Sheffield stands) 14 long-stay (stands – oversized cycles)	PBSA students and staff
Level 02	28 long-stay (Sheffield stands)	PBSA students
Level 03	28 long-stay (Sheffield stands)	PBSA students
Sub-total	456 long-stay (364 two-tier; 78 standard Sheffield stands; 14 oversized) 15 short-stay	PBSA
Travis Perkins		
Ground floor	6 long-stay (Sheffield stands) 3 short-stay (Sheffield stands)	Travis Perkins staff Travis Perkins customers
Sub-total	6 long-stay 3 short-stay	Travis Perkins
Scheme total	**462 long-stay; 18 short-stay**	

Table 7: Proposed cycle parking breakdown

In the event of a lift breaking down or requiring maintenance, Unite Students has a service arrangement with a lift maintenance company where any issues are responded to within two hours. Should the cycle lift be out of service, one of the passenger lifts can be used by cyclists (refer to Figure 18).

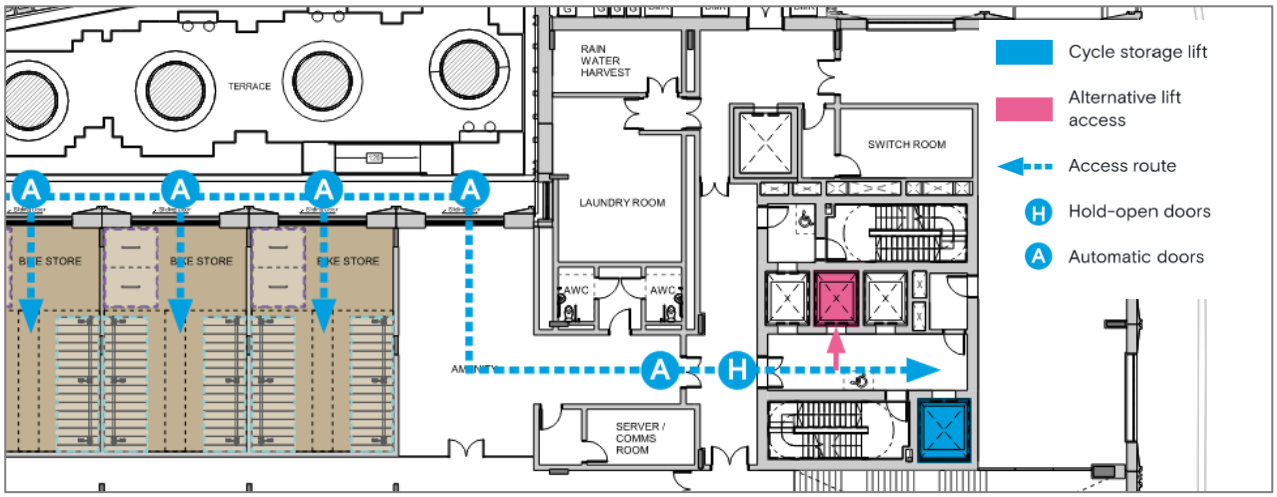


Figure 18: Alternative lift access

Cycles would need to be lifted vertically to enable their movement within the lift car. This lift will be supplied with additional protection drapes for such periods. On-site staff will be able to provide additional assistance to students with moving cycles via the passenger lift if required. All doors will be either automatic or hold-open. Appendix F shows the alternative arrangements should a lift breakdown occur.

9.1 Cargo bike deliveries

In the letter dated 11 August 2025, TfL suggested the proposed courier delivery zone at the Harrow Road entrance to the PBSA lacks any secure cargo cycle parking facilities. This section provides a review of the proposed sheffield stand provision in the public realm.

The two proposed Sheffield stands outside the PBSA lobby will be 1m apart and align with standards set out within the London Cycling Design Standards (LCDS). They will also be located 900mm from the closest external wall of the building. Figure 19 shows the location of the two proposed cycle parking stands, notated by a blue square. Cargo bikes will be able to also use the raised layby to park. The two Sheffield stands offer opportunity to park four standard bikes or three oversized or adapted cycles.

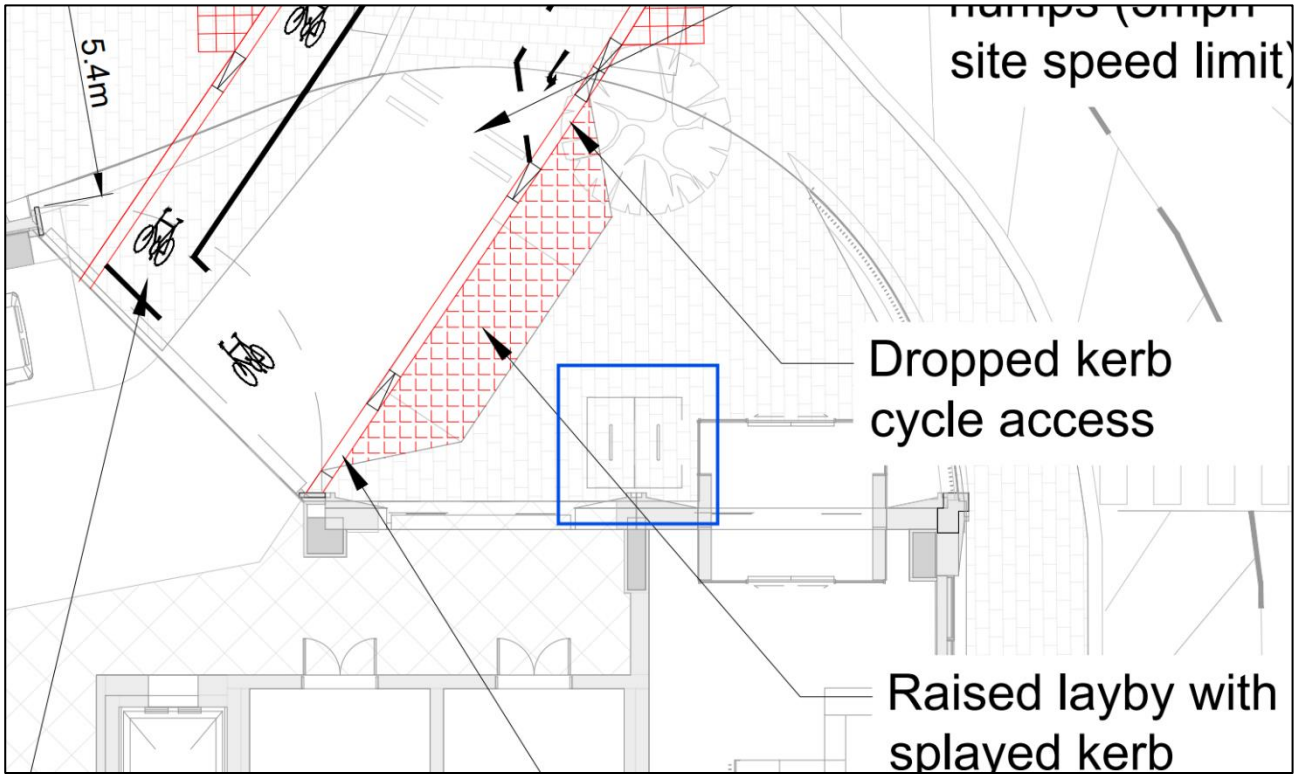


Figure 19: Public realm cycle parking (suitable for cargo bikes)

10. Trip generation

10.1 Multimodal trip generation

In the letter dated 11 August 2025, TfL requested daily trips by mode to be provided. As the Proposed Development is to re-provide the existing operations of the builders merchant, it is not anticipated that TP would generate additional trips to the network. The proposed methodology therefore forecasts the additional multi-modal trips generated by the PBSA.

For completeness, this section sets out the selected TRICS sites that were agreed as part of the pre-app scoping exercise discussed with TfL and WCC; the resultant trip rates (including daily trip rates) and the forecast multi-modal trip generation.

10.1.1 Travis Perkins trip demand

Table 8 shows the observed vehicular arrivals / departures for TP by hour, between 07:00 and 12:00 (as part of a day long survey). The hourly average arrivals during the morning ranged between 17 to 24 vehicles (approximately 33 to 48 two-way movements). It is anticipated that the future TP branch would generate similar level of vehicular movements. It should be noted that there is expected to be a reduction in HGV movements included in Table 8 due to the proposed operational changes associated with TP.

Time	4 Sept 2025				8 Sept 2025				Average
	Car	LGV	HGV	Total	Car	LGV	HGV	Total	Total
07:00	8	24	8	40	2	18	6	26	**33**
08:00	6	48	0	54	4	36	2	42	**48**
09:00	6	30	6	42	14	26	10	50	**46**
10:00	10	28	10	48	2	38	2	42	**45**
11:00	2	26	8	36	4	36	8	48	**42**
12:00	12	36	0	48	0	38	6	44	**46**
Total (07:00-12:00)	44	192	32	268	26	192	34	252	**260**

Table 8: Observed number of TP vehicular movements by hour

10.1.2 TRICS survey selection

The site surveys were selected from TRICS based on the following criteria:

- Located in London
- Located within town centre
- PTAL 5 or above

The initial sites identified from the above criteria have been reviewed further to identify the most analogous sites. The two selected sites are presented in Table 9. These two sites (CN-03-G-01 and LB-03-G-02) are located in central London and are considered representative of the Proposed Development.

Reference	Description	Town/City	Date of Survey	No. of beds	Parking	PTAL Rating
CN-03-G-01	Student Flats	King's Cross Camden	14/11/2017	571	0	6a
LB-03-G-02	Student Flats	Lambeth	27/11/2018	1,100	0	6a

Table 9: Selected sites – PBSA

10.1.3 Total people trip rates

The trip rates (per bedroom) of the selected sites are shown in Table 10. The total people trip rates do not include servicing trips.

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-21:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
Trip rates	0.010	0.089	0.099	0.077	0.042	0.119	0.661	0.72	1.381

Table 10: Person trip rates per bedroom – PBSA

10.1.4 Forecast trip generation by mode

The forecast multimodal trip generation for the proposed development is shown in Table 11, including the daily trips by mode. The forecast accounts for the adjusted cycle mode split to align with WCC's cycle mode share target of 7%.

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily (07:00-21:00)		
	In	Out	Total	In	Out	Total	In	Out	Total
LUL	1	9	10	8	4	12	73	80	153
Bus	1	13	15	10	6	16	87	95	182
Taxi	0	1	1	1	1	2	22	24	46
Cycling	0	4	4	3	2	5	28	30	58
Walking	3	27	30	24	13	37	190	206	396
Total	**6**	**54**	**60**	**47**	**25**	**72**	**400**	**436**	**836**

Table 11: Trip generation by mode by time period

10.2 Servicing trip generation

10.2.1 Overview

In the letter dated 11 August and subsequent liaison, TfL queried the forecast servicing trip generation presented in the submitted Transport Assessment being too low. TfL suggested the latest TRICS trip rates should be referred to when considering servicing trip generation. Given there are no recent proxy PBSA sites on TRICS to forecast servicing trip generation, it was agreed with TfL that a sensitivity test would be undertaken using the recent C3 TRICS site surveys presented in the *Servicing & Deliveries at Residential Apartments in London* (June 2025).

10.2.2 C3 TRICS surveys

Table 12 shows the development characteristics for each of the three TRICS sites and is taken from *Table 1* in the June 2025 TRICS report, which can be found in full at Appendix H.

Key development data	Site surveys		
	Canaletto Tower	Porter's Edge	Bowl Court
Main location type	Edge of Town Centre	Neighbourhood Centre	Edge of Town Centre
Sub-location type	Development Zone	Development Zone	Built-up Zone
Opening year	2016	2018	2019
Site area (ha.)	0.21	0.67	0.11
Housing density	1,461.54	349.25	509.09
Total occupied dwellings	190	234	56
Total bedrooms	307	440	113
Average bedrooms per dwelling	1.6	1.9	2.0
On-site parking spaces	88	0	0
Buses / trams within 400m	946	1,056	1,536
Trains within 1km	1,266	964	3,334
Population (500m radius excl. development)	14,642	9,500	6,400
Car ownership per household (5mi radius)	<= 0.5	<= 0.5	<= 0.5
PTAL rating	5	6a	6b

Table 12: June 2025 C3 TRICS site characteristics

10.2.3 Sensitivity test

A sensitivity test using the C3 TRICS trip rates and the Unite survey takeaway delivery profile to forecast the peak hour trip demand. Daily profiles of C3 takeaway trips are unavailable within the TRICS database; therefore, the C3 peak hour cannot be derived directly from the dataset. As such, the PBSA Unite survey daily rates have been used to proportionally synthesise the C3 peak hour rates. Table 13 shows a comparison of the trip rates and trip generation using the TRICS surveys and the Unite surveys (with the TRICS-synthesised rates indicated in grey).

	Trip rates (no. of arrivals)		Trip generation (no. of arrivals)	
Hours	TRICS survey	Unite surveys	TRICS survey	Unite surveys
7	0.001	0.000	0	0
8	0.001	0.000	1	0
9	0.002	0.000	1	0
10	0.003	0.001	2	0
11	0.005	0.001	3	1
12	0.009	0.002	6	1
13	0.012	0.003	7	2

	Trip rates (no. of arrivals)		Trip generation (no. of arrivals)	
14	0.011	0.002	7	1
15	0.006	0.001	3	1
16	0.006	0.001	4	1
17	0.014	0.003	8	2
18	0.013	0.003	8	2
19	0.014	0.003	8	2
20	**0.019**	**0.004**	**12**	**3**
21	**0.019**	**0.004**	**12**	**3**
22	0.009	0.002	6	1
23	0.009	0.002	5	1
00	0.004	0.001	2	0
Total	**0.157**	**0.035**	**95**	**21**

Table 13: Trip generation comparison – TRICS sites and Unite commissioned surveys

**Grey highlights denote derived trips and demand based on Unite takeaway delivery profile; red text denotes peak observed demand.*

As shown in Table 13, at the peak hours (20:00-22:00), the Unite surveys forecast a maximum of three takeaway arrivals, compared to 12 arrivals with the TRICS data. These deliveries are forecast to be made 100% by pedal cycles or mopeds.

While much greater rates are derived from the C3 land use, the C3 rates would only lead to a maximum of one delivery every five minutes on average and would be outside of the highway network peak hours and TP operational hours. This level of demand would not have a significant impact on the highway network.

In terms of capacity to accommodate courier activity forecast as part of the sensitivity test, all deliveries are assumed to approach the PBSA from Harrow Road and use the four cycle parking stands in the proposed public realm at the corner of Harrow Road and Bishops Bridge Road.

Based on an assumption of a 2-to 3-minute delivery dwell time (observed from the Unite surveys), the four stands provide 80 to 120 ‘slots’ for cycle parking per hour. As such, the peak hour demand of 12 arrivals is well within the capacity of the four cycle stands. Noting couriers can also access the site from the Canalside entrance, with additional cycle stands, and therefore additional capacity, that can accommodate the courier cyclists.

11. Travel Plan

11.1 Overview

TfL during the pre-Hearing stage requested that a Travel Plan be prepared for the proposed PBSA to monitor and manage the predicted transport outcomes. This Chapter should be read in conjunction with the operational measures for the Travis Perkins deliveries or servicing activities, set out within the Delivery and Servicing Management Plan (DSMP) for the Proposed Development.

11.2 Aim and objectives

The objectives of the Travel Plan have been developed in keeping with the targets set out in the Mayor's Transport Strategy and the cycling targets set out in the WCC Cycling Strategy. The objectives are to achieve the following outcomes:

- Identify which measures are needed to maximise the use of non-car travel;
- Catalyse a change in the travel behaviour of individuals to active modes of travel (with a focus on non-main journey purpose for more localised trips – as for instance, the travel distance to King's College London may be outside of walkable distance); and
- Identify ways of reducing the need for travel to and from the development beyond the local area.

The proposed development will be car-free and therefore it is not forecast to generate car trips (single occupancy or otherwise). As such, the primary objective of the Travel Plan is to seek to encourage that a higher proportion of trips are made by active travel modes to reduce dependency on public transport or taxis.

11.3 Management

The successful impact of the Travel Plan will be dependent upon buy-in from student residents, and the processes put in place to support, implement and develop the measures outlined. The Applicant would be responsible in the management and funding of the Travel Plan.

The nominated Travel Plan Coordinator (TPC) will play a vital role in the success of the Travel Plan and is responsible for the day-to-day management, coordination, promotion and implementation of the Travel Plan. The TPC will also be responsible for engaging with students, especially on matters related to women's safety as a factor for active travel. The TPC will act as a point of contact for WCC and local stakeholders, and for any student occupants who have queries about their travel. Although not appointed at this stage, the TPC is likely to be a member of the Unite Students on-site management team.

11.4 Marketing and communication strategy

Marketing and communication can be used to influence the travel choices of the student residents and PBSA Site staff. By communicating the existence of the Travel Plan to the students and staff, they will gain a better understanding of their travel options and be made aware of the benefits. The document's purpose, objectives and the role of individuals in achieving these objectives will be clearly described.

All student occupants will be made aware of the existence and benefits of the Travel Plan. The dissemination of this information would be via internal communication processes (such as the Unite app) and posters containing travel information and benefits.

11.5 Measures and initiatives

The measures included in a Travel Plan should be tailored to the needs and aspirations of the future student residents of the PBSA. Owing to the nature of the development, the bespoke measures shown in Table 14 have been identified for the students and staff of the proposed PBSA.

Measure type	Theme	Measure(s)
Design measures	Sustainable location with PTAL 6b	Immediate connection to footways and cycle network surrounding this site
		Close proximity to Santander cycle docking stations and e-mobility services
		Excellent accessibility to public transport services
	Car-free development	The development is car-free with the exception of one PBSA accessible car parking space. This level of provision is in line with the requirements of the London Plan (2021)
	Pedestrian and cyclist access	Identified routes to King's College London / other unis / local amenities that can be accessible by walking / cycling
		Provision of 456 long-stay spaces and 15 short-stay spaces for PBSA. Of the long-stay spaces, a mix of cycle types is provided, including 14 oversized spaces, 78 more accessible spaces in Sheffield stands, and 364 spaces in two-tier racks
		Provision of support equipment for cycle maintenance
Soft measures	Marking the Travel Plan	A community noticeboard would be provided in the reception area to display information on the Travel Plan and promote active travel modes
	Promotion of walking for local and education trips where appropriate – to seek to keep trips within the local area and reducing the need to travel by public transport	Promote or make student occupants aware of the local facilities / amenities that are accessible within walking distance
		Raise awareness of the health benefits of walking by disseminating travel information packs and placing notices on information boards
		Organise walking challenges (e.g. pedometer challenge) among occupiers of the Site
		An 'umbrella pool' of public umbrellas which would be made available at reception for use by those caught out by the rain
		Social walking groups (e.g. walking 'breakfast club') could be established, with the aim of promoting health and allowing student walkers to socialise
	Promotion of cycling (to encourage mode shift from public transport to cycle)	Promote or make student occupants aware of the local facilities / amenities that are accessible within cycling distance
		Seek to provide discounts for local cycle shops for purchases and maintenance, e.g. Westminster Wheels, Fettle Bike Repair, etc.
		Provide regular and free cycle maintenance checks on-site, e.g. Dr Bike / Nip Nip events
		Information on cycle routes within and around the Site would be provided on the information boards. These maps would be prepared and regularly reviewed by the TPC

Measure type	Theme	Measure(s)
		A cycle buddy scheme and cycle user clubs could be set up which would help occupants new to travelling by cycles to develop their confidence by cycling with more experienced riders
		Promote local cycle groups such as JoyRiders London, Cycle Connect; and cycle training operated by local organisations
	Active travel information and public transport options	A notice board with travel information will be installed within the reception area, highlighting up to date local active travel information such as walking routes, cycling routes, cycle hire stations and pedestrian friendly paths, especially to local amenities and relevant universities. The noticeboard will also provide information about public transport options, such as key bus routes and services. The TPC will be responsible for regularly reviewing and updating the content presented on the board

Table 14: Measures and initiatives

11.6 Monitoring and review

Student occupants in a PBSA are a transient population changing annually and therefore, unlike a residential travel plan, there is no inbuilt behaviour change year to year over and above that created by the hard measures and continuation of the soft measures. While there is little benefit in tracking performance against 'year on year mode share targets', travel surveys could be employed by TPC to monitor the effectiveness of the Travel Plan measures. The TPC could then review the need to update any soft measures, along with consultation feedback gathered from engagement with student occupants, or local stakeholders.

As noted in Table 14, the Proposed Development will be car-free and the Site is located in a sustainable location benefiting from a PTAL of 6b with well-connected walking and cycling network. As such, the location of the Site inherently encourages sustainable travel behaviours.

11.6.1 Annual monitoring

A review of the Travel Plan will be undertaken annually on the anniversary of the date of the Occupation of the first PBSA units for a period of three years. A written report would be submitted to WCC following completion of the review, setting out the findings of the review including the extent to which the objectives set out within the Travel Plan are being achieved. The report would also include any proposals for improving the measures of the Travel Plan.

11.6.2 Sustainable Transport Fund

A Sustainable Transport Fund (STF) of £50,000, secured for the first three years, is proposed to support the Travel Plan monitoring and review stage. This Fund acts as a 'pot of money' available to be drawn upon should there be any further minor transport improvements necessary within the first three years of opening of the scheme. The minor transport improvements could include women safety-related measures, further dockless bike management, subject to findings from Travel Plan surveys.

12. Construction

12.1 Overview

A Construction Logistics Plan (CLP) was developed by Arup and submitted as part of the 2024 planning application for the Site. In the letter dated 11 August, TfL requested clarification on the arrangements regarding bus stop (Bus Stop S) closure during the demolition and construction period. This Section should be read in conjunction with the CLP dated 17 May 2024. The programme contained in Section 20.6 has been updated as shown below.

Construction programme

1. Detailed Design – January 2026 to January 2027
2. Demolition – start December 2026 until September 2027
3. Building Safety Act Gate Way 2 approval period – January 2027 to September 2027
4. Main Construction works – September 2027
5. Completion of construction works – July 2030

In relation to discussion in CLP Section 20.1 - sub section 20.1.1 - Consideration of Suspension of Bus Stop, further review has undertaken to establish the likely need for a temporary bus stop suspension to facilitate the build programme. The applicant will endeavour to keep the bus stop opened across the construction programme for as long as possible; but indicatively it is likely that a request for a bus stop closure for up to 18 months (out of a 4.5-year construction programme) would be made. The closure period would be considered in greater detail as part of the Full CLP, when a construction contractor is appointed post planning approval. As discussed with TfL, bus passengers would be able to access bus service 18 from Bus Stop B Hermitage Road, which is within 250m located on Harrow Road (refer to Figure 20). This would allow bus service 18 to remain accessible to the local area.

Figure 20: Bus route 18 along Harrow Road

Appendix A

TfL detailed letter

Transport for London

To: Stephanie Yu and Andy Ford

Company: ARUP

Address: 8 Fitzroy Street, London, W1T 4BJ

From: TfL Spatial Planning Officers – Jack Holmes (Case Officer) & Lucy Simpson (Principal Technical Planner)

Site: Baltic Wharf - 149 Harrow Road

Date: 11.08.2025

Detailed letter to address TfL requirements for the Stage 3 application at Baltic Wharf, 149 Harrow Road

Executive Summary:

This letter sets out Transport for London's (TfL) transport-related requirements for the Stage 3 application at Baltic Wharf, 149 Harrow Road. Following the refusal of planning permission by Westminster City Council in January 2025, and subsequent site visits by TfL officers, a number of operational and safety concerns have been identified relating to the existing Travis Perkins site and its impact on the surrounding highway network.

TfL requires a revised Transport Assessment and supporting documentation to address these concerns and demonstrate that the proposed development can operate safely and effectively. Key areas requiring further detail include site access and servicing arrangements, accident mitigation, construction logistics, public realm improvements, and cycle infrastructure. TfL also requests confirmation of operational feasibility from Travis Perkins and clarity on student management measures.

This letter outlines the specific actions and evidence required to progress the application and ensure compliance with London Plan policies. TfL remains committed to working collaboratively with the applicant team to resolve these matters.

This letter is based on the submitted Transport Assessment (TA) produced by Arup and dated 16th May 2024 and the TfL Discussion Document (DD) produced by Arup and dated 12th June 2025.

Transport for London

Contents:

Transport for London

1.0 - Background:

The current proposals include the redevelopment of site to re-provide the existing Travis Perkins at ground and mezzanine floor and the provision of a 605-room purpose-built student accommodation (PBSA) and 45.8 sqm of flexible space for community uses above. The application was refused planning permission by Westminster Planning committee in January 2025.

The site is located to the south of A40 Westway (elevated section) and north of Paddington railway station. It is bordered by A404 Harrow Road to the northeast, A4206 Bishop's Bridge Road to the southeast and Grand Union Canal to the southwest.

The site is currently occupied by Travis Perkins (TP). Currently, vehicles enter the Travis Perkins site in a forward gear from Harrow Road (southeast corner) and exit in a forward gear onto Harrow Road (northeast corner).

It is noted that there was no specific transport reason for refusal, yet TfL officers have conducted three separate site visits since the application was called in and have observed safety concerns with how the current situation is impacting the highway network. These observations raise concerns in relation to London Plan policies T2 (Healthy Streets) and T4 (Assessing and Mitigating Transport Impacts).

The following recurring safety issues where observed:

- Vehicles overhanging the public highway and blocking the footway for pedestrians and encroaching on the live carriageway.
- Parking in the bus stop and on the footway
- Waiting in the hatched area on the gyratory blocking sightlines for vehicles/cyclists entering the gyratory from Bishops Bridge

2.0 - Required Documentation/Plans:

- An Updated Transport Assessment (TA)
- Statement of Operational Support from Travis Perkins
- Constructions Logistics Plan (with an in-principle construction agreement)
- Existing layout plan of the Travis Perkins site
- Existing highway layout plan
- Proposed highway layout plan with the proposed temporary changes to mitigate against the issues identified on site visits.

3.0 Existing Environment - updated TA must include a further explanation of the existing environment:

<u>3.1 - Existing environment explanation:</u>

The current TA indicates that there is no issue with the existing operation of the Travis Perkins (TP) and the interactions surrounding highway network. It states that at the peak times (07:30, 09:00, 09:30 and 12:00), a total of 10 vehicles are observed within the bays of the TP yard. Which would leave 4 spare spaces (excluding staff parking) at any one time. TfL's on-site observations indicate that the site regularly operates at or beyond capacity, particularly during deliveries. Therefore, the TA requires updating to reflect the current operational situation both on site and its impact on the highway network as a result.

The site currently regularly uses manual closures to restrict vehicles into the car park/loading area to facilitate HGV/OGV movements or handle bulkier orders. This element should be included within the existing site analysis. Failure to include undermines all car park occupancy survey data, as it does not reflect true customer demand.

TfL is aware that mitigation proposals include better management of deliveries and/or customer collections. At present there is no disaggregation of vehicle purpose so no estimation of likely impact can be made to understand the effectiveness of future proposals. TfL request information on journey purpose is included to disaggregate customer activity, from servicing activity.

TfL require the parking assessment to be updated. This must include the impact both internally and externally including waiting vehicles outside and those waiting beyond the car park closure sign, in the hatched area of the gyratory, on Bishops Bridge, in the bus stop and those parked on the footway/road. These situations should be reflected in the existing situation analysis.

- The updated TA should include survey data that includes Date of Survey
- Time range survey covered
- Number of survey days
- The raw data submission (need the whole period not just peaks)
- Vehicle classification (LGV/HGV/etc) and time of arrivals
- Vehicle purpose – deliver, customer collection (planned/unplanned), staff parking, other etc
- Vehicle dwell time
- Parking accumulation surveys
- Times and juration of manual car park closures
- External queuing per area: beyond stop line/ hatched area/ bus stop/ etc

In addition to the above requirements TfL require the usage data for the operational parking spaces (every 10 minutes), and a video survey of the site and surrounding network in order to observe the network, waiting on the network, overhanging of the footway, and parking on footway/bus stop.

The TA states a pedestrian survey count was undertaken during the AM Peak (08:00-09:00), at two locations along Harrow Road and Bishop's Bridge Road. To analyse this count, TfL

require the date of this survey, and request that the survey should also include the predicted PBSA peak hours.

It is clear from on-site observations that the site's current operation practice is causing issues to the surrounding highway network and potentially causing an increase in accidents involving vulnerable road users. TfL have conducted accident analysis on the cluster of accidents outside the site, where there is a high number of accidents involving vulnerable road users. The cluster represents an above London average amount of accidents involving vulnerable road users. This cluster represents a significant safety concern and must be addressed in line with London Plan policies T2 and T4, which prioritise the safety of vulnerable road users. Further analysis of the accident cluster should be provided by the updated TA including recommendations to reduce accidents at this location.

TfL considers this additional data and analysis essential to accurately understand the current situation and therefore assess the transport impacts of the proposed development and ensure the scheme does not exacerbate existing highway safety issues.

4.0 Proposed Environment - updated TA must include a further information on the proposed development:

4.1 - Letter of Operational Support and methodologies:

To ensure confidence in the proposed operational model, TfL requests a formal letter of support from Travis Perkins. The letter should confirm that Travis Perkins is aware and satisfied with the proposal, including the site layout and the operational strategy. This should also include that TP is satisfied in how the site is proposed to be serviced, parking arrangement, customer initiatives such as 'click and collect, and customer access. Ensuring the proposal can successfully work within their operating model.

The updated TA must reflect the letter of operational support. TfL requests that within the TA there is a breakdown of how click & collect will be managed, including booking protocols, customer arrival procedures, and how on-site waiting will be handled to prevent highway obstruction. TfL would welcome examples of similar click & collect operations at other Travis Perkins sites to demonstrate that the model is proven and scalable. TfL is concerned that without clear operational controls, customers arriving early may continue to wait on-street, replicating the current situation and undermining proposed mitigation.

4.2 - Highway environment concerns:

As stated in the TfL detailed comments:

> *'Further information is needed to demonstrate how the proposals will deliver a step change in cycling connections and safety in line with London Plan policy T2 and T4.'*

Due to the accident analysis undertaken and the site visit observations, there are several elements that need to be addressed for cyclists, particularly regarding the overspilled

waiting vehicles. These issues present a significant and ongoing risk to vulnerable road users and must be addressed prior to occupation of the proposed development.

It is understood that WCC (Westminster City Council) have a scheme to enhance the pedestrian and cyclist safety on Harrow Road and Bishops Bridge. This scheme would replace the gyratory with a peninsular junction and add signalised pedestrian crossing facilities. Whilst this scheme is unlikely to be implemented before first occupation a suitable contribution towards the scheme will be requested. TfL supports Westminster City Council's proposed junction improvements; however, given the timeline for implementation, interim safety measures must be secured to ensure the development does not exacerbate existing.

The applicant is encouraged to development solutions to enable and protect cycling such as the following temporary mitigation measures, and be implemented prior to occupation (engagement with WCC is still required, and any temporary design will need to be agreed with WCC):

- Installation of cycle wands and orca kerbs to protect the cycle lane
- Extension of the kerb line over the hatched area to prevent informal parking
- Repainting of the cycle lane in a contrasting colour to improve visibility
- Installation of enforcement cameras to deter illegal parking and overhanging

The TA will need to provide a plan showing (but not limited to) the above recommendations including safety auditing. These measures align with London Plan Policy T2 (Healthy Streets) and T4 (Assessing and Mitigating Transport Impacts), which require developments to proactively address safety and connectivity for active travel.

Proposed improvements should be included in the updated TA including, the Stage 1 RSA, detailed drawings, implementation timelines, and responsibilities for delivery of these temporary works, to enable full assessment by TfL, WCC, and other consultees.

4.3 Access:

Students will access the site from the primary access point on Harrow Road or a secondary access point from the canal side. An access point to the ancillary space (community use) is provided on the canal side.

Clarifications on the operating hours of the canal side entrance should be provided. TfL encourages the canal-side entrance to be accessible 24/7 to support active travel and ensure safe, legible access for students and community users. The applicant should work with GLA Design Officers to ensure this entrance is well-lit, clearly signposted, and designed to promote safety and inclusivity. The proposed scheme retains the existing vehicular access and egress arrangements for Travis Perkins. All vehicles enter the TP yard from Harrow Road and exit back onto Harrow Road in a forward gear.

Accessible car parking space associated with the PBSA is accessed from the yard the same way as TP vehicles. PBSA taxi pick-up/drop off for students would access the site using the same entrance, stand at the dedicated drop off bay, and exit the site via the yard back onto Harrow Road during the operational hours of TP. Further clarity is required on

how PBSA-related movements, including taxi drop-offs and accessible parking, will be safely accommodated when the TP yard is closed or partially inaccessible. TfL is concerned that without a clear strategy, this could result in informal waiting or obstruction on Harrow Road.

The applicant should provide a management strategy detailing how taxis will be directed, managed, and accommodated during TP yard closures, including signage, marshalling, and contingency arrangements.

4.4 - Public Realm Improvements – TfL Urban Design Officer Comments:

By connecting the canal towpath, as well as bringing a sizeable resident population to this location, the proposal should increase footfall through the space to the north-west of the site that connects the towpath, the footbridge and the Porteus Road underpass. We welcome the proposed public realm improvements set out in the DAS, page 216.

This could go further to improve public safety and legibility by addressing wayfinding from the Harrow Road footway down to the towpath or underpass. For example, consideration should be given to public art and improved lighting for the wall either side of the underpass entrance and for the curved wall proposed at the northern end of the Travis Perkins building. The approach proposed for lighting the towpath under Bishop's Bridge Road could be extended to lighting and activating the towpath under the Westway. This could be seen as a single, integrated public art commission and would help to create a stronger, legible relationship between Harrow Road, the space where the footbridge lands, the underpass entrance, the towpath and the end-wall of the new building.

The geometry of the vehicular exit creates unnecessary severance for pedestrians. For a small servicing area, a footway crossover would be more appropriate than the arrangement proposed, which gives priority to vehicles over pedestrians. The blister paving layout shown will not be suitable for visually impaired pedestrians using the kerb edge to navigate. The unusual geometry of the path for vehicles makes it almost impossible to design appropriate tactile paving.

The intent of the flush kerb to the east of the vehicular entrance for 'pedestrian, cycle and moped access' is understood but it is unintuitive and raises concerns about road safety and impact on pedestrians in practice. While adequate visibility is demonstrated in the TA, other road users will not be expecting two-wheelers to emerge from the footway in this location, just as they are seeking to join Harrow Road. It may also encourage cycles and mopeds to seek to enter the site from the hatched part of the carriageway, which would not be advisable from the Bishop's Bridge Road approach. Bringing cycles and mopeds across the footway at an unexpected position would have a negative impact on pedestrian comfort and safety of pedestrians. A wider entrance able to accommodate a marked contraflow cycle facility out of the main entrance would be preferable.

The proposed courier delivery zone at the Harrow Road entrance to the PBSA is welcome, but lacks any secure cargo cycle parking facilities, which should be provided over and above the short-stay cycle parking for Travis Perkins and the PBSA. It will also require level access from the main entrance. The drop-off space could be designed at footway level so

that it can double-up as part of the pedestrian space or courier delivery zone when not in use by a vehicle.

The proposed building is to be set back from the Grand Union Canal to create a new section of canal side walkway which completes the canal side path along the eastern side of the Canal and creates additional pedestrian / cycle accesses to the site. An obligation in the s106 should ensure that the path is publicly accessible.

4.5 Active Travel Zone and Women's Safety**:**

TfL considers the integration of women's safety and active travel principles essential to the success of the proposed development and its alignment with London Plan policies T2 and D8.

The London Plan places great emphasis on walking, cycling and public transport. There has also been an increased awareness in Women's Safety issues through the Mayor's VAWG Strategy. This Strategy acknowledges the role that public realm can have on shaping how women and girls of all backgrounds use and/or move through a space. The Mayor is implementing world leading policies to improve air quality in London, including through the promotion of walking, cycling and use of public transport. For this to work for women and girls, public spaces need to be safer, and women and girls need to feel safe when using them. An understanding of what walking conditions during darker hours is considered to be a key element of the Healthy Streets Transport Assessment. An appealing, safe, and perceived to be safe, active travel at all times of the day is also key to supporting a strategic modal shift.

The updated TA should include a mapped day and night Active Travel Zone (ATZ) audit, any findings or observations from the local Women's Safety Audit, and a schedule of proposed interventions to address identified deficiencies. Improvements delivered by the applicant should be clearly referenced so that the reader is clear of what will be in situ from occupation. All proposals should reflect best practice guidance, including TfL's Healthy Streets Checklist, the GLA's Safety in Public Space guidance, and the Mayor's VAWG Strategy. TfL's latest advice on Nighttime ATZ assessments can be found here: night-time-atz-advice-revbapr2025.pdf

TfL has identified the following areas requiring further assessment and improvement:

- Harrow Road frontage – lacks activation and passive surveillance. This includes the waiting environment at the bus stop which can be a key element for users of the bus network
- Route to the underpass
- Underpass environment – perceived safety concerns during darker hours
- Canal-side walk to Stone Wharf – limited visibility and lighting
- Area under the pedestrian bridge and proposed park – potential for isolation and low footfall

The TA must be updated to show these improvements and identify the deficiencies in the area, including understanding of the existing night/hours of darkness environment around

the site. Although not a requirement, day and night illustrations of the areas highlighted can be useful to demonstrate the value of the proposal to the reader. TfL will seek appropriate contributions to support improvements in the identified areas, in line with London Plan policy T2 and in coordination with WCC's wider public realm strategy.

Although not directly transport related, the applicant should consider signing up to the Mayor's Night Safety Charter which may help to provide reassurance that women's safety will be taken seriously at this site. https://www.london.gov.uk/programmes-strategies/arts-and-culture/24-hour-london/womens-night-safety-charter.

4.6 Cycle Parking:

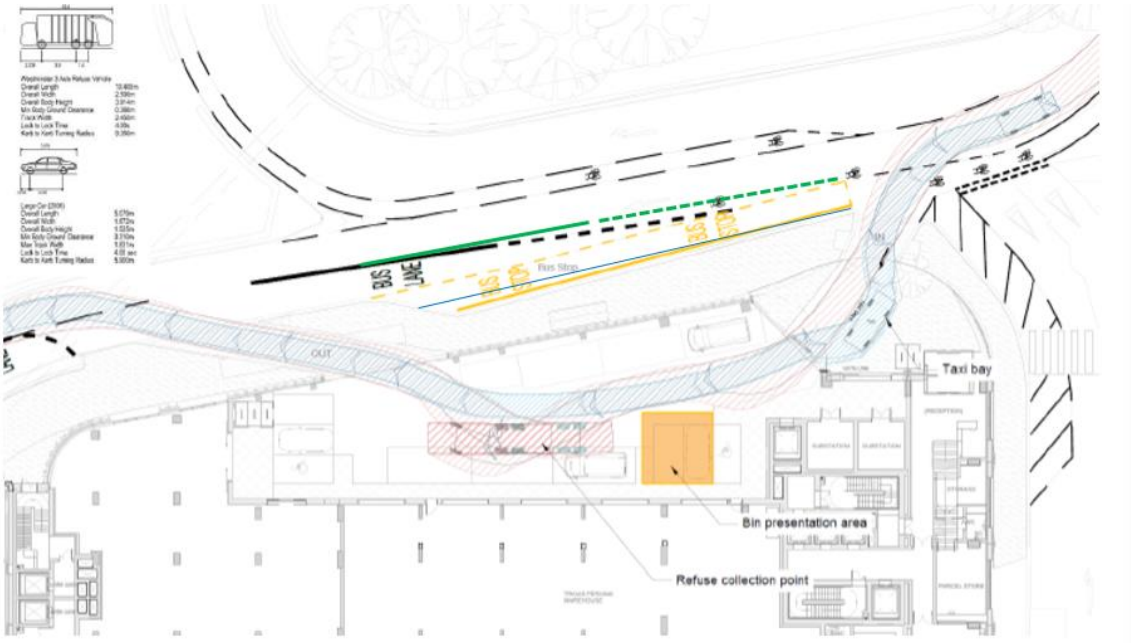
All cycle parking provision should comply with London Plan Policy T5 and LCDS standards, ensuring accessibility, security, and convenience for all users. TfL requests a detailed breakdown of the cycle parking mix by type (e.g. long-stay, short-stay, accessible, cargo) and user group (PBSA residents, TP staff/customers, visitors), including location and access arrangements. Given the volume of cycle parking proposed at first floor level, a second lift is required to ensure resilience, reduce waiting times, and maintain accessibility in the event of maintenance or failure.

There is a current situation whereby dockless bikes are being left in the pedestrian refuge on Bishops Bridge Road. It is anticipated that with additional students on the site this situation could worsen and as a result lead to accidents and/or blocking of the pedestrian refuge. This issue should be reflected in the TA. TfL requests a robust dockless bike management strategy, including coordination with operators and WCC, to prevent obstruction of pedestrian routes. The applicant should identify a suitable location for a formal dockless parking bay near the site.

4.7 Bus Shelter Harrow Road

The Bus shelter is to be moved against the building line, this is welcomed. Further discussion should be held about updating the bus stop, it is likely that a new shelter will be required. A Realtime countdown should be secured, and Bus Operations would like the applicant to explore changes to the bus layout as seen in below image, ensuring that visibility splays are not adversely affected for the exit. The below changes would widen the footway. This should be secured and delivered as part of a s278 package with WCC.

TfL is currently investigating the best possible facilities for women's safety which may include the introduction of CCTV. Due to the hostile environment, a commitment to providing the highest quality of bus stop is required.



4.8 Car Parking:

The PBSA is car free with the exception of 1 disabled space. The TP will have 1 disabled space and is re-providing 11 operational bays.

As above, TfL require an update to the surveys of the existing situation and how the site is to work with fewer operational bays. Further information on the 'click & collect' strategy is required to understand if this is to be sufficient.

4.9 Student Servicing Strategy:

The off-street layby near the building entrance will allow for vehicle deliveries to the PBSA. Cycle and moped's have a separate access directly from Harrow Road. Is there enough cycle parking at this location, and can it accommodate cargo bikes? Further evidence is required to demonstrate that the moped and cycle egress across the pedestrian footway can be safely accommodated. This should be assessed within the Stage 1 Road Safety Audit (RSA) and supported by swept path analysis and visibility assessments.

The TA states it is proposed that all non-perishable goods would be delivered through a consolidated approach off-site. The consolidation services will be provided by a third-party consolidation operator. TfL requests further detail on the proposed consolidation strategy, including the name of the third-party operator, how deliveries will be scheduled and managed, and examples of where this approach has been successfully implemented at comparable sites.

4.10 Travis Perkins Servicing Strategy:

After 17:00, TP may require the yard for extended deliveries post-operating hours. A small area, that is secured (with bollards or equivalent) and managed by on-site personnel, may be cordoned off for TP use between 17:00 and 20:00. The remainder of the yard would be handed over to PBSA. Gates to yard closed but unlocked.

TfL requests clarification on the operational arrangements for the TP yard between 17:00 and 23:00, including:

- Whether deliveries will occur during this period, and what type?
- How access will be managed if the shutter is closed?
- What signage or marshalling will be in place to prevent unauthorised access or confusion?

A comprehensive Servicing Management Plan should be submitted within the TA, detailing delivery schedules, access protocols, marshalling arrangements, and how conflicts between TP and PBSA servicing will be avoided

4.11 Management Measures:

It is noted that start/end term arrangements are detailed in a student management plan this included initiatives including a bookable and managed time slot allocation for arrivals / departures, out of TP trading hours which is supported. However, it goes onto state Unite Students would limit the maximum number of arrivals to 120 students per day.

During the weekday the out of trading hours are 17:00-23:00. If up to 120 students are to arrive during this time, they would have a maximum of 36 minutes to pack/unpack. TfL is concerned that without a robust contingency strategy, the proposed arrival system may result in unmanaged queuing, on-street waiting, or disruption to TP operations. The applicant should provide a contingency protocol for students who miss their slot or require additional time, including marshalling, overflow arrangements, and communication procedures. It is currently unclear how the system will respond to operational deviations. TfL requests further detail to ensure the proposed approach is resilient, enforceable, and does not result in highway safety concerns.

4.12 Trip Generation:

All trip generation and servicing assumptions should be assessed in line with London Plan Policies T4 and T7. The TRICS database has been used to determine total person trips for the PBSA. The resultant total person trips are reasonable. The TRICS database has also been used to determine mode share. The LUL mode share seems high, and cycle mode share too low. It is noted that a cycle mode share sensitivity has been undertaken assuming a 7% cycle mode share and reduced TP mode share. This seems more realistic. It would be helpful if the applicant could provide daily trips by mode.

Servicing trip rates are based on four operational Unite Student PBSA sites. The delivery trip rates seem low particularly the food. The TA goes onto state that a 605-bed PBSA is forecast to generate 22 food deliveries 23 parcel deliveries in a day. The TA goes onto state that the proposed development is proposing to provide a consolidated delivery approach for the non-perishable goods (parcel). Therefore, only three parcel delivery vehicles per day are expected for the proposed development. TfL require further information is required on the proposed consolidation strategy, including the operator, delivery scheduling, and evidence of successful implementation at comparable sites Further information is needed

on the relatively low food servicing trips, and this should make note of the latest TRICS data.

The updated TA should include a combined trip profile showing total vehicle and person movements throughout the day for both TP and PBSA uses, including peak overlap periods.

4.13 Construction:

Further information on how the site is to be constructed is required. An in-principle agreement must be secured.

5.0 Conclusion:

In summary, TfL has identified a number of outstanding transport-related concerns that must be addressed to ensure the proposed development is acceptable in planning and operational terms. These include clarifying the current operational impacts of the Travis Perkins site, providing robust mitigation strategies for highway safety, and ensuring the proposed layout and management measures are feasible and deliverable. To progress the application, TfL requires:

- A revised Transport Assessment with detailed analysis of existing and proposed site operations.
- Updated/new survey data, including video evidence of current highway impacts.
- A plan of the temporary highway arrangement
- A letter of operational support from Travis Perkins confirming feasibility of proposed changes.
- Clear strategies for construction, servicing, student arrivals, and cycle infrastructure.
- Commitments to public realm improvements and contributions to local safety schemes.

TfL expects the applicant to address these points comprehensively to demonstrate that the development will not exacerbate existing issues and will deliver meaningful improvements in line with London Plan policies. We look forward to receiving the updated submission and continuing to work collaboratively to resolve these matters.

Kind regards,

Jack Holmes (TfL Spatial Planning – Case Officer) & Lucy Simpson (TfL Principal Technical Planner)

Appendix B

Travis Perkins operational statement

We're here to help build better communities and enrich lives.

Travis Perkins plc

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Emily Leslie
Principal Strategic Planner,
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SE1 2AA

4 August 2025

Travis Perkins, Baltic Wharf, Harrow Road, Paddington

This letter has been written by Travis Perkins to support the planning application currently under consideration by the GLA at Baltic Wharf (Ref. 2025/0212/S3) for 'Demolition of existing Travis Perkins building(s) at 149-157 Harrow Road, erection of a building (plus basement) between 4 and 20 storeys in height, comprising the reprovision of Travis Perkins builders merchant (Sui Generis) at ground and mezzanine floor and the development of purpose-built student accommodation (Sui Generis) and community space (Sui Generis), together with the creation of a canal side path with landscaping and a retained gable wall end, and other on-site public realm improvements. Provision of cycle parking and car parking for the Travis Perkins Builders Merchant. Installation of plant equipment and other associated works, including canal mooring improvements and a new public walkway under Bishops Bridge Road bridge.'

This letter is intended to explain how Travis Perkins intends to operate the new branch and warehouse proposed under the application. There are a number of changes proposed to the branch which will lead to traffic management improvements in the wider area.

Revised branch profile

The branch currently employs 23 colleagues with responsibilities such as sales and customer queries, administrative duties, yard staff and drivers. The stock range is relatively wide, but the main products we offer are timber, plasterboard, heating and plumbing items, painting and decorating items and ironmongery.

In order to maximise efficiency and output, this particular site is heavily dependent upon customer collections as opposed to deliveries. The current split is 68% collect and 32% delivered compared to 40% collect and 60% delivered for the Travis Perkins business as a whole.

As part of the proposed scheme, the branch will become a collect only business with no outbound delivery fulfilment. This activity will be shared between several nearby branches although predominantly Chamberlayne Road, Queens Park. The other branches picking up the outbound delivery fulfilment to varying degrees will be Kensal Green, Camden, Southwark, Vauxhall, Battersea and Putney. The revised approach clearly provides an opportunity for on site colleagues to dedicate a much greater proportion of time towards both fulfilling on site customer collections and also traffic / yard management generally. In other words, there will be considerably less time dedicated towards collecting building products together destined for delivery, an activity which currently occupies two branch colleagues at any one time. These colleagues will be reallocated to customer facing roles within the yard.

Moreover, the delivery vehicles are typically considerably larger and therefore tend to be responsible for any blockage that occurs within the yard. This is essentially due to them occupying van bays which then requires a closure to inbound vans on health and safety grounds due to forklift movements. Clearly with the new proposal, this will no longer be the case thereby allowing increased traffic flow throughout the yard.

Approach to deliveries / couriers / click and collect.

Currently inbound deliveries occur between 5.00 am and 7.00 am together with occasional deliveries occuring throughout the afternoon. Under the proposal and the move towards a customer collect business with less stock and a reduced range, it allows any future inbound deliveries to be restricted between the hours of 5.00 am and 7.00 am only.

The branch currently experiences around 10 courier deliveries every day, typically from long wheel base (LWB) Ford Transit type vehicles. The couriers that would otherwise arrive at the site would be consolidated into a single delivery van, that could easily be timed to avoid busy periods. The couriers currently require van spaces, which could otherwise be used by a customer, and would require the suspension of inbound customer vans due to forklift truck unloading activity.

The proposal involves this activity being directed towards our Chamberlayne Road, Queen Park branch, which in turn allows further consolidation and process improvements at that branch too. This consolidated approach will lead directly to a reduction in vehicle deliveries to the site.

This is a trend supported by the fact that 'Click and Collect' now accounts for a greater and rapidly increasing proportion of our transactions. Our experience of 'Click and Collect' is that it expedites collection times and drastically reduces parking bay dwell times particularly in respect of our London sites. At the moment, only 10% of customers purchase through 'Click and Collect', so this represents a major growth area for the business, particularly in terms of ordering via the TP App, with the aim of growing to 25% of overall customer purchases. In our experience, branch colleagues spend less time serving 'Click and Collect' customers compared to non 'Click and Collect' customers, enabling them to swiftly serve the next van that may be waiting to gain access into the site.

Enhanced site access management

We clearly recognise there are wider traffic management issues outside the site, but we strongly feel the proposals will significantly help to improve the situation, alongside other WCC / TFL highway measures.

Currently customers are directed to the most appropriate parking bay once it becomes available and when a member of staff is available to serve them (in respect of non shop customers). During busy periods, typically in the morning, a stop board barrier system is implemented which is a proven and effective method of segregating customers in a way that enhances safety for both colleagues and customers alike.

Customers requiring yard material are therefore held until staff are available to assist with parking activity in order to expedite manoeuvring into and out of bays. This also prevents customers from helping themselves to materials, ensuring yard health and safety requirements are fully controlled. In our experience, the barrier is an effective method for controlling traffic flow and parking within the yard area and consequently allows our colleagues to serve customers quickly and effectively, but importantly within a safe environment.

There are always at least six colleagues on site at all times, but with the new proposal they will all be far more present as there won't be any ongoing requirement to deal with the 15-20 daily outbound deliveries.

Although parking bays are typically allocated on a first come basis, we do direct the traffic according to customer requirements in terms of what products they require. Customers requiring the trade counter / shop area are directed to the empty bay. This clearly limits the use of forklifts within the yard area and also minimises vehicles manoeuvring within the yard.

We also undertake regular on site training in order to ensure colleagues are mindful of the highways situation at all times. The training specifically relates to directing vehicles through the yard in a completely safe manner, alongside banksmen training specifically aimed at helping to manoeuvre vehicles in order to ensure cars flow through.

Reduced forklift activity

Due to the current inefficient, compromised layout of the warehouse, a considerable amount of product is stored at height and consequently it would be necessary to use forklifts to manoeuvre stock around. So for example, we currently use forklifts to move sheets of ply to customers waiting within the yard area.

This will not be required under the new proposal, as the sheets will be moved by trolley rather than forklift. As a result, there will be a dramatic reduction in forklift activity both within the warehouse and yard areas which will inevitably lead to fewer delays and on site congestion.

Another consequence of the inefficient warehouse and fulfilling outbound Travis Perkins customer delivery lorries, is that a considerable amount of product is needed to be stored within the yard area itself, accessed regularly by forklift trucks. A modern branch warehouse with reduced profile would allow for all products to be contained within the warehouse. Therefore, any management of product by forklift trucks would be contained within the warehouse, rather than the yard as is presently the case.

In addition, forklift operations will be significantly reduced under the new proposal due to the lack of any outbound Travis Perkins lorries, or indeed any unloading of inbound couriers. The proposed scheme has been designed in such a way that it will completely support outbound customers, with all quick selling products being stored at a low level within the warehouse.

Yard designed to meet operational requirements.

The overall layout of both the warehouse and the yard has been meticulously planned and optimised by our vastly experienced space planning team. The team have considered various layouts from other branch locations and as such, we are extremely confident our preferred layout will not in any way detrimentally impact the traffic situation outside the site.

The Travis Perkins Stay Safe principle requires all customers to arrive and leave in a forward gear, with no reversing necessary. Side parking bays have been designed to provide sufficient room for vans, being 7m x 3m allowing sufficient space to open both back and side doors.

As previously noted, the branch will store a greater amount of product at low level which will be moved by either hand or trolley. Consequently, the only reason a forklift will leave the confines of the warehouse is to actually access the adjacent warehouse aisle. This does happen currently too, so it doesn't represent an increase in forklift activity and access closure.

This initiative, combined with the greatly reduced vehicle loading / unloading with the revised proposal, would easily represent a 60% reduction in forklift activity. Within the revised scheme, forklift activity will be restricted to

- Internal management of material within the warehouse, replenishing quick selling product at low level
- Occasional handling of bulky items to customer vehicles (most material to be transferred by hand / trolley)
- Unloading of consolidated delivery vans avoiding peak times
- Unloading deliveries before yard opening

Another significant improvement is that under the proposal, bays will no longer be required to occasionally store outbound picked materials. All these points create a far safer environment for both colleagues and customers.

Conclusion

In conclusion, we feel the planning application currently under consideration by the GLA will be transformative in terms of branch profile, the control of deliveries and couriers, enhanced site access arrangements, yard management and the vast reduction in the use of forklifts. In our view, this will provide significant improvements in terms of colleague and customer safety, working environment, efficiency and output.

Travis Perkins

Travis Perkins PLC

Copy: Alison Bradshaw TFL
Copy: Jack Holmes TFL

Appendix C

Technical drawings

A1

Notes

Existing and proposed road markings are indicative only

2.4m x 25m Visibility splay (20mph MfS)

Realigned and widened dropped kerbs & tactile paving

Bus flag

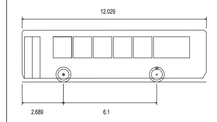
Kerb line realigned to widen footway

Contraflow cycle lane exit

Dropped kerb cycle access

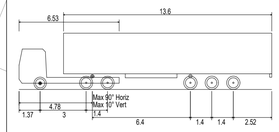
Raised layby with splayed kerb

Dropped kerb cycle egress



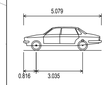
Electric bus 12m

Overall Length	12.029m
Overall Width	2.470m
Overall Body Height	3.385m
Min Body Ground Clearance	0.249m
Max Track Width	2.110m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	8.760m



Max Legal Length Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.530m



Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	5.900m

DRAFT

Rev	Date	By	Chkd	Appd
D	30/09/25	RJM	SY	AF
C	12/09/25	RJM	SY	AF
B	05/09/25	RJM	SY	AF
A	03/09/25	RJM	SY	AF

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Client
Unite Students

Project Title
Unite Paddington

Drawing Title
Revised Highways Arrangement Swept Path Analysis

Scale at A1 1:200

Role Transport

Suitability - For Inormation -

Arup Job No 602563-42

Rev D

Name 274835-42-SK-66

0 5 10 Metres
Scale 1:200

Do not scale

A1

Kerbed island with cyclist keep left bollard

2.4m x 25m Visibility splay (20mph MfS)

Realigned and widened dropped kerbs & tactile paving

Bus flag

Kerb line realigned to widen footway

Contraflow cycle lane exit

Pair of speed humps (5mph site speed limit)

Dropped kerb cycle access

Raised layby with splayed kerb

Dropped kerb cycle egress

25m

2.7m

3.6m

5.4m

5.7m

BUS LANE

BUS SLOPE

1 to 14

1 to 25

147

SUBSTATION

SUBSTATION

AWC

PARCEL STORE

TRAVIS PERKINS WAREHOUSE

Unite core

Unite core

KITCHENETTE

COMMUNITY SPACE

0 5 10 Metres

Scale 1:200

Do not scale

Notes

Existing and proposed road markings are indicative only

DRAFT

F	30/09/25	RJM	SY	AF
E	12/09/25	RJM	SY	AF
D	05/09/25	RJM	SY	AF
C	04/09/25	RJM	SY	AF
B	03/09/25	RJM	SY	AF
A	26/08/25	RJM	SY	AF

Rev	Date	By	Chkd	Appd

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Client
Unite Students

Project Title
Unite Paddington

Drawing Title
Revised Highways Arrangement

Scale at A1 1:200

Role Transport

Suitability - For Inormation -

Arup Job No 602563-42

Rev F

Name 274835-42-SK-64

A1

Guard rail extended around new island

Surface mounted kerb

Existing 3.7m of dockless cycle parking (max capacity circa 12 bikes)

Existing guard rail removed

19.3m of dockless cycle parking (max capacity circa 60 bikes)

SUBSTATION

SUBSTATION

STORAGE

AWC

Do not scale

DRAFT

Rev	Date	By	Chkd	Appd
A	12/09/25	RJM	SY	AF

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Client
Unite Students

Project Title
Unite Paddington

Drawing Title
Indicative Dockless Cycle Parking

Scale at A1 1:100

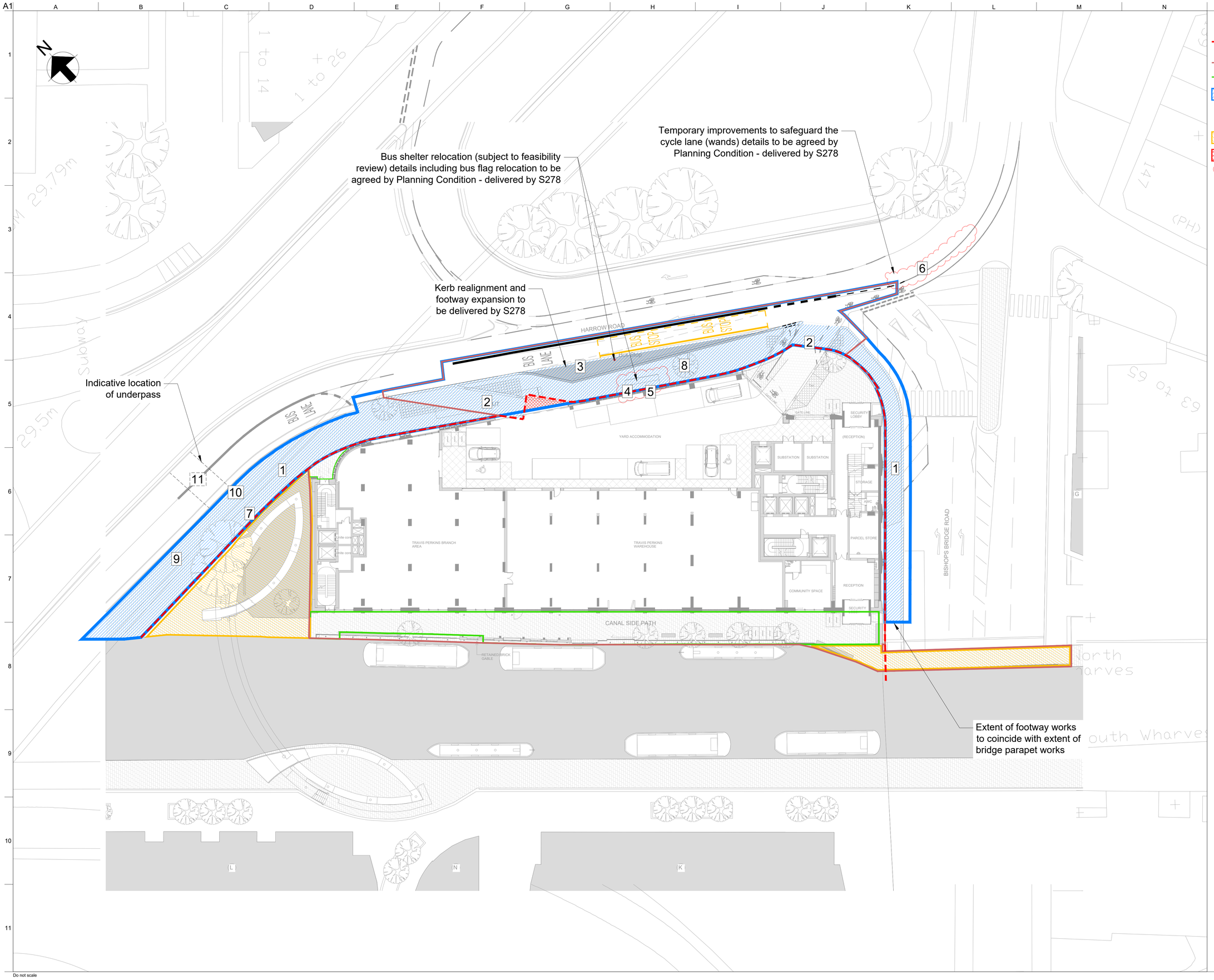
Role Transport

Suitability - For Inormation -

Arup Job No **602563-42**

Rev **A**

Name **274835-42-SK-67**



Key

- Highway boundary traced from WCC PDF plan DP/HP/JRP/201902021
- Indicative redline boundary
- Extent of non S278 improvements
- Extent of repairing / reinstatement works including vehicle crossovers, tactile paving and post-construction footway reinstatement (extent to be agreed)
- Improvements requiring 3rd party agreement
- Extent of S38 works
- Extent of S278 Condition Works

1. Minor making good / repairing works of footway along Harrow Road (including area along Porteus Road underpass up to canal) and Bishops Bridge Road
2. Access and egress improvements
3. Bus stop kerb alignment and footway expansion
4. Bus shelter relocation
5. Bus shelter upgrade (to TfL innovation team standard, including realtime countdown)
6. Cycle lane safeguarding (cycle wands) on Harrow Road
7. Triangle Land - Legible London totem (1no.) + surrounding works. Exact location to be confirmed
8. Installation of a new semi mature tree at Harrow Road junction to replace tree removed to facilitate build
9. Improved lighting at Harrow Road junction with underpass
10. Installation of new signage at junction of Harrow Road and underpass. Exact location to be confirmed
11. Porteus underpass - enhanced lighting by addition of reflective cladding and lighting

Notes

Boundary lines are indicative and to be verified by the client team

Rev	Date	By	Chkd	Appd
M	28/10/25	RJM	SY	AF
L	22/10/25	RJM	SY	AF
K	14/10/25	RJM	SY	AF
J	13/10/25	RJM	SY	AF
I	30/10/24	RJM	SY	AF
H	14/01/22	RJM	SY	AF
G	17/11/21	RJM	SY	AF
F	16/11/21	RJM	SY	AF
E	28/06/21	RJM	AF	AF
D	17/06/21	RJM	AF	AF
C	14/06/21	RJM	AF	AF
B	02/06/21	RJM	AF	AF
A	27/05/21	RJM	AF	AF

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Client
Unite Students

Project Title
Unite Paddington

Drawing Title
External Offsite
Highways Improvements

Scale at A1 1:250

Role Transport

Suitability - For Inormation -

Arup Job No **602563-42**

Rev **M**

Name **274835-42-SK-27**

Do not scale

Appendix D

Survey analysis (TN02)

ARUP

Technical Note

Project title	Baltic Wharf
Job number	274835-00
File reference	TFL-TN02 v2
cc	
Prepared by	SY / AF
Date	9 October 2025
Subject	Traffic survey analysis

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1. Background

This Technical Note addresses the existing interaction between on-site builder's yard activities and the potential for queues to form back onto the highway (Harrow Road). Travis Perkins (TP) manage incoming vehicles to the site through a mobile stop board, which is deployed for the majority of the time that the yard is functioning, except for quieter periods.

Queues form on the carriageway when on site activity means that inbound vehicles cannot progress to bays, past the deployed stop sign. There is only capacity for one vehicle to wait on site before queueing traffic has to wait on the carriageway. Queues can form whilst vehicles wait on both the Harrow Road approach and Bishops Bridge Road to access the site.

It has been noted to date to TfL, that the propensity for queuing would significantly diminish due to the future operational arrangements for the re-provided TP. TP has prepared an operational statement letter dated, 30 September 2025, which should be considered in conjunction with this Technical Note (refer to Appendix A).

Queuing will diminish with the proposed scheme, primarily related to the future TP not providing outbound TP deliveries from the branch and all inbound materials would be:

- Undertaken before yard opening (05:00-07:00) for the main branch opening (with an opportunity for evening deliveries if needed);
- Courier deliveries would be consolidated into one single delivery, scheduled for quieter times of the day.

Together, with other aspects such as a modern branch layout, would mean that the deployment of forklift trucks would be significantly reduced (by an estimated 60%). It is the deployment of forklift trucks that is the main reason for the holding inbound vehicles at the stop board for protracted periods of time. This vehicle management measure is to avoid mixing of forklifts and incoming vehicles for health and safety reasons. It is the coincidence of the protracted holding of vehicles during times of heavier inbound customer vehicles that can lead to the extensive queuing on the carriageway.

ARUP

Job number	274835-00
Date	9 October 2025

TfL has, through site visits, witnessed extensive on-street queuing that can be caused by TP operations, leading to concerns around highways operations and safety. This is an aspect recognised by the applicant team and local stakeholders. TfL has requested further review of the proposed scheme's operations and assurance that the application would seek betterment to the level of queuing on the adjacent highways.

An instance of this extensive queuing was captured on 16 June 2025, when a TP flatbed van was being loaded adjacent to the builder's yard entrance. The stop board was deployed for a protracted period of time (at around 09:30) to prioritise forklift truck movements to and from the TP flatbed van. During a period of over ten minutes only a single inbound vehicle was permitted entry into the yard, which coincided with a busy period. Figure 1 illustrates the van being loaded and Figure 2 demonstrates lengthy queuing that subsequently formed.

Figure 1 – Travis Perkins flatbed van – forklift truck loading materials with stopboard deployed

ARUP

Job number	274835-00
Date	9 October 2025

Figure 2 – Extensive Highways Queuing (due to prolonged stop board deployment)

In summary, vehicles are not permitted to enter the site when forklift trucks are deployed within the yard, which currently regularly occurs due to the following reasons:

- The loading of Travis Perkins flatbeds for outbound customer deliveries
- The unloading of materials from Travis Perkins flatbeds and supplier lorries
- The loading of customer vans with materials
- The inefficient storage of materials at higher level requiring forklift to transfer
- The management of materials within the yard

For the proposed scheme, Travis Perkins will change its operations to:

- Ensure that all inbound deliveries occur before the yard opens
- Consolidate inbound materials to reduce the number of vehicles involved in bringing material to the site, timed to avoid busy periods.
- Future branch to be 100% collection only, no outbound deliveries are expected from the site. This leads to reduced forklift movements within the yard and therefore reducing the need for stop board deployment.

Managing inbound / outbound deliveries which tend to be undertaken by large vehicles and forklifts are required for unloading materials in the yard. This activity would trigger deployment of the vehicle stop board to prevent mixing of inbound vehicles and forklifts manoeuvring in the yard for health and safety reasons.

The future operations would reduce the instances where the stop board needs to restrict access for a protracted period of time, limiting the likelihood of extensive queues forming. As discussed below, the stop board was deployed for protracted periods eight times on 4 September and 11 times on 8 September (see further details in Table 2).

TP further expects a reduced deployment of forklift truck activities due to improved racking and accessibility of regularly demanded materials, such that there is less reliance on forklift trucks.

All the above future operational aspects would further reduce the time where inbound vehicles are held for protracted periods. As such, the proposed scheme would deliver betterment to the level of queuing that is presently experienced.

1.1 Traffic surveys

In order to demonstrate the relationship between on-site builder's yard activity, stop board deployment and queue building, traffic surveys have been undertaken. Following liaison with TP, it is understood that trading is at consistent levels between Monday and Thursday, with Friday being typically quieter. As such, Friday was avoided as a survey day.

The surveys have been undertaken for the full day on 4 September 2025 (Thursday) and 8 September 2025 (Monday). The surveys help to demonstrate the builders yard conditions that require the stop board (delay) of customer yards from entering the site. The busiest period was observed to be between 07:00-13:00, as such, data collected between this period has been interrogated in detail and further assessed.

TP has subsequently confirmed that trading was at similar level all week. The two survey days trading were ahead of target (2.4% ahead of budget on 4 September, and 0.8% ahead of budget on 8 September). This means that the survey days provide an evidence base for factors that cause queuing and the queuing betterment that is likely to occur with the proposed scheme.

1.2 Technical Note Purpose

This Note summarises the following aspects of the surveys:

- Inbound vehicle movements during the survey period (with the peak hour identified)
- Bay occupancy during the survey period
- Bay dwell times
- Queue length surveys.

This Note then identifies the instances of queue formation and reviews the builder's yard activity that is requiring the deployment of the stop board for a protracted period of time, referred to as the queuing causal factor.

The queuing causal factors are then considered relative to the Travis Perkins Operational letter (dated 30 September 2025) to understand whether the factor would remain for the proposed scheme.

The survey days have then been interrogated to understand which time periods would provide a proxy for the future scheme, i.e. when there are busy inbound vehicle periods where there are no inbound or outbound deliveries (requiring the protracted deployment of the stop board) to understand the level of queuing that is likely to occur with the proposed scheme.

2. Survey Summary

2.1 Vehicle Demand

The inbound vehicle movements during the survey period, have been summarised in Figure 3 and Figure 4 for the 4 September 2025 and 8 September 2025, respectively. The inbound peak hour is identified for each survey days, i.e. 08:10 to 09:10 on 4 September and 08:40 to 09:40 on 8 September.

The types of vehicles attending the site include:

- Travis Perkins inbound vehicles (materials to be offloaded into the branch / yard)
- Travis Perkins outbound vehicles (materials to be loaded on the Travis Perkins vehicles to be delivered to clients)
- Customer vehicles (customer collecting purchases, to be loaded onto the vehicles)

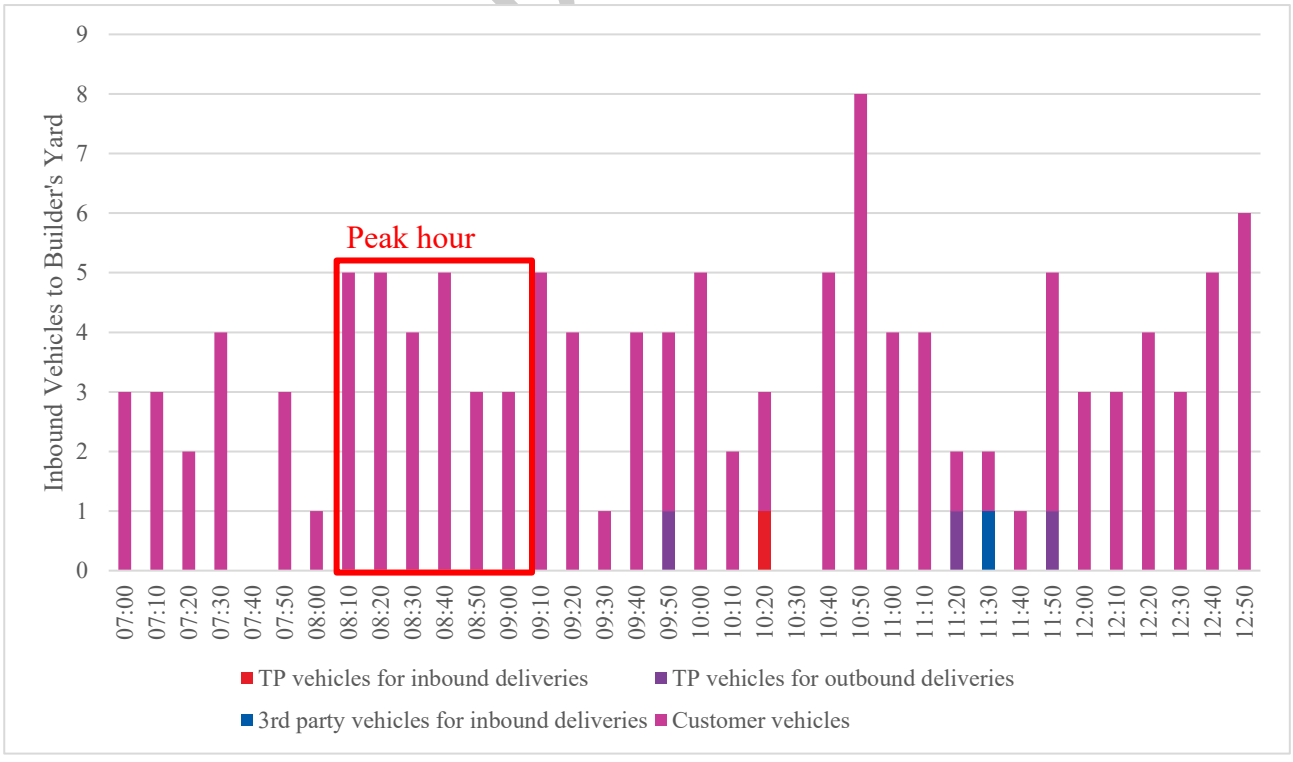

Figure 3 – Inbound vehicles to Builder's Yard by purpose (4 September 2025)

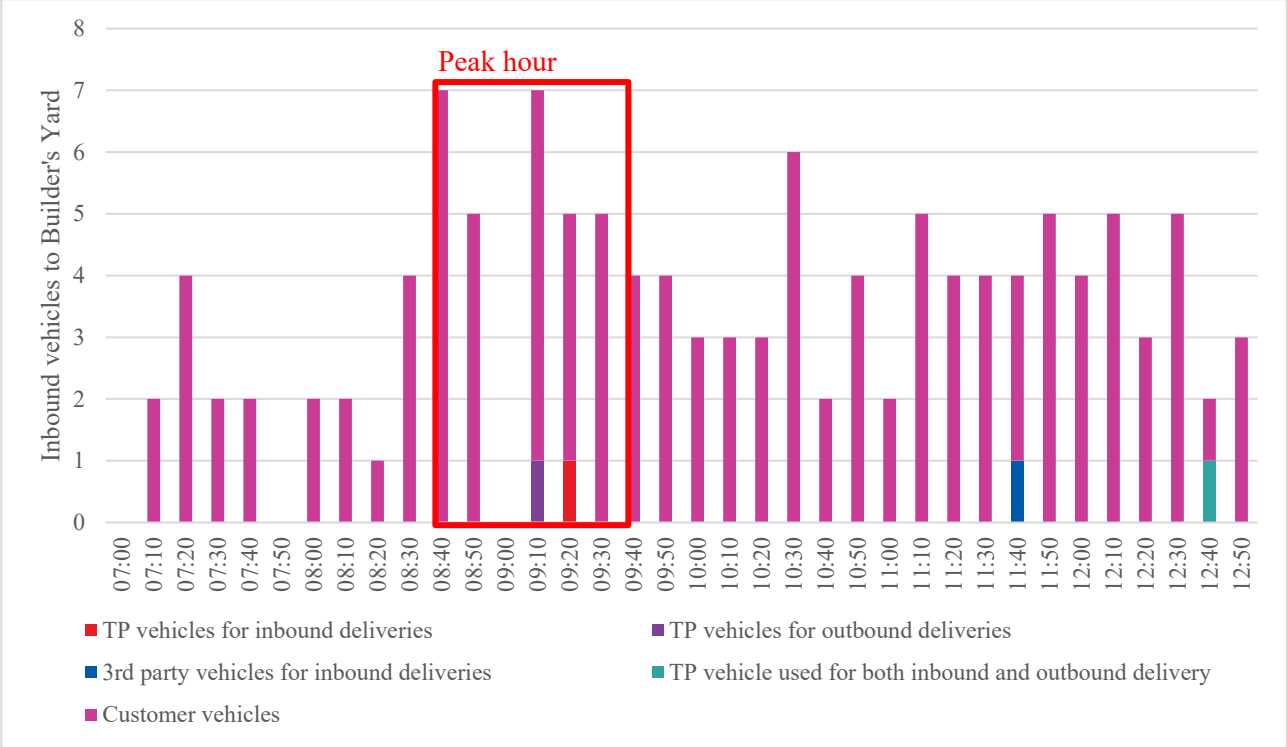

Figure 4 – Inbound vehicles to Builder's Yard by purpose (8 September 2025)

2.2 Bay Occupancy

The existing builder's yard contains 11no. bays and a disabled car parking bay, as illustrated by Figure 5. Two areas of the yard were used to store three staff vehicles on the survey days. Staff parking demand has been removed from the survey analysis, as no staff car parking is provided for the proposed scheme. Figure 6 and Figure 7 provide a 5-minute occupancy spot count, relative to the overall capacity of the existing yard (11no. is indicated as the overall capacity of regular bays of the yard).

ARUP

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Figure 5 – Number of bays in the existing yard

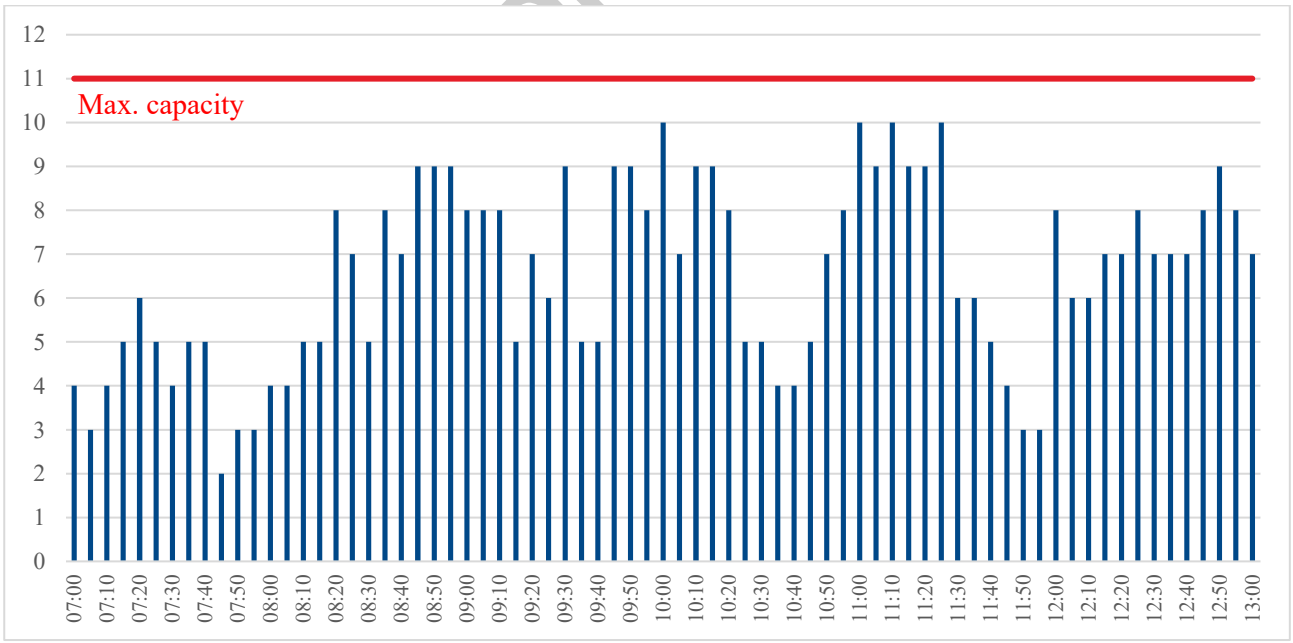

Figure 6 – Spot count of number of parked vehicles (excluding staff parking) – 4 September 2025

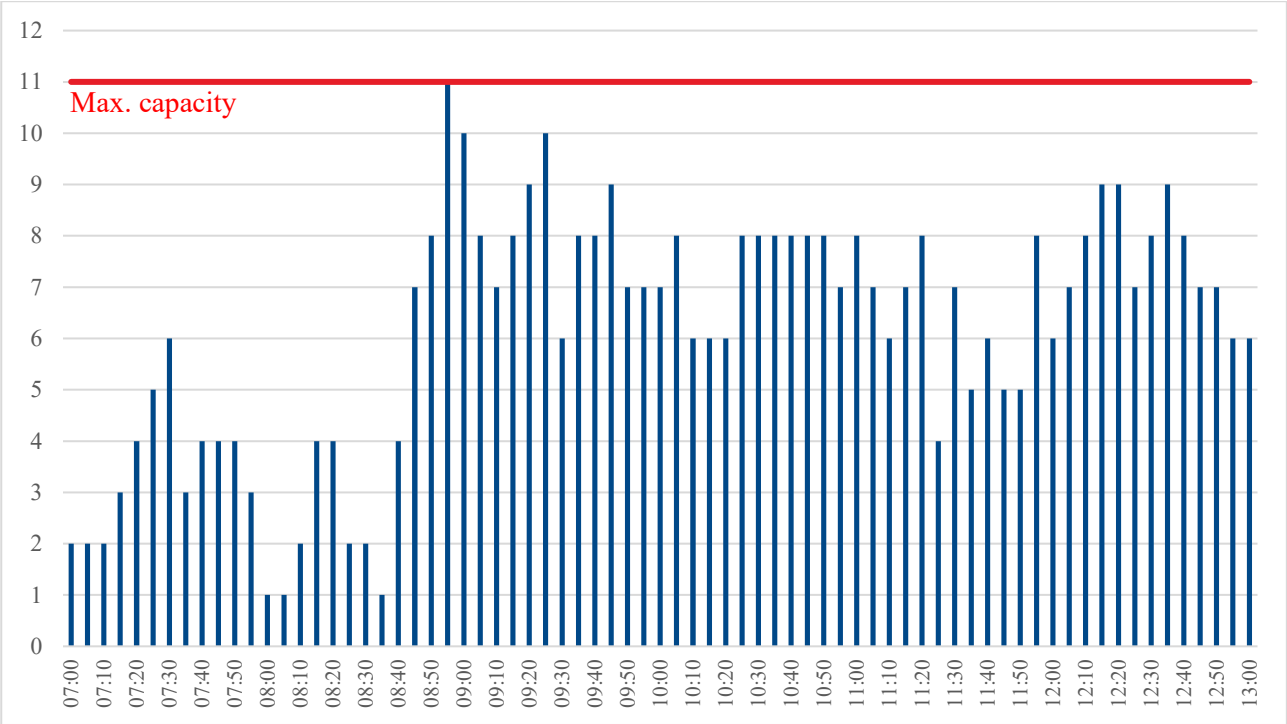

Figure 7 – Spot count of number of parked vehicles (excluding staff parking) – 8 September 2025

2.3 Bay Dwell Time

The profile of dwell times in parking bays are illustrated by Table 1.

Table 1 – Average bay dwell time (minutes) by vehicle classification (4 and 8 September 2025)

Date	Average dwell time (minutes) – all modes	Average dwell time (minutes) by mode		
		Cars	LGVs	OGVs
4 September 2025	19	18	17	30
8 September 2025	20	19	20	26

2.4 Queue Length

The queue profiles across the two survey days are illustrated by Figure 8 and Figure 9. As previously referenced, the current yard is able to accommodate up to a single van within the demise of the site / yard prior to the stop board. As such, the queue starts forming on the highway beyond the 1no. vehicle indicated in Figure 1.

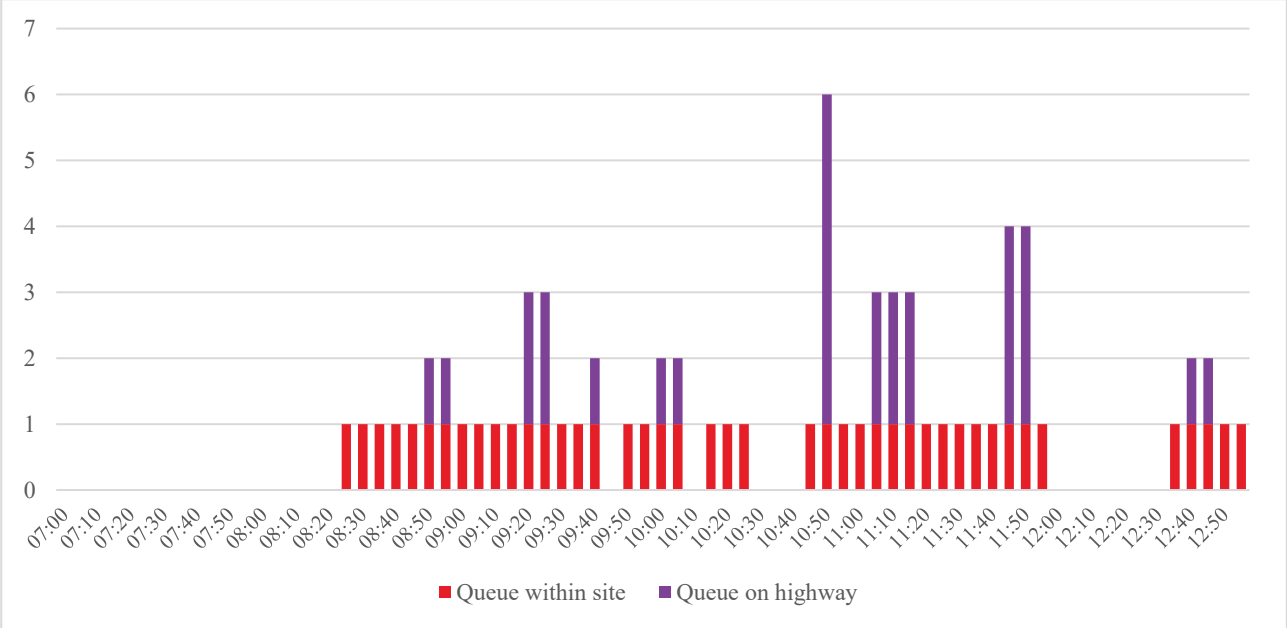

Figure 8 - Maximum queue (per 5-minute period) to enter site (4 September 2025)

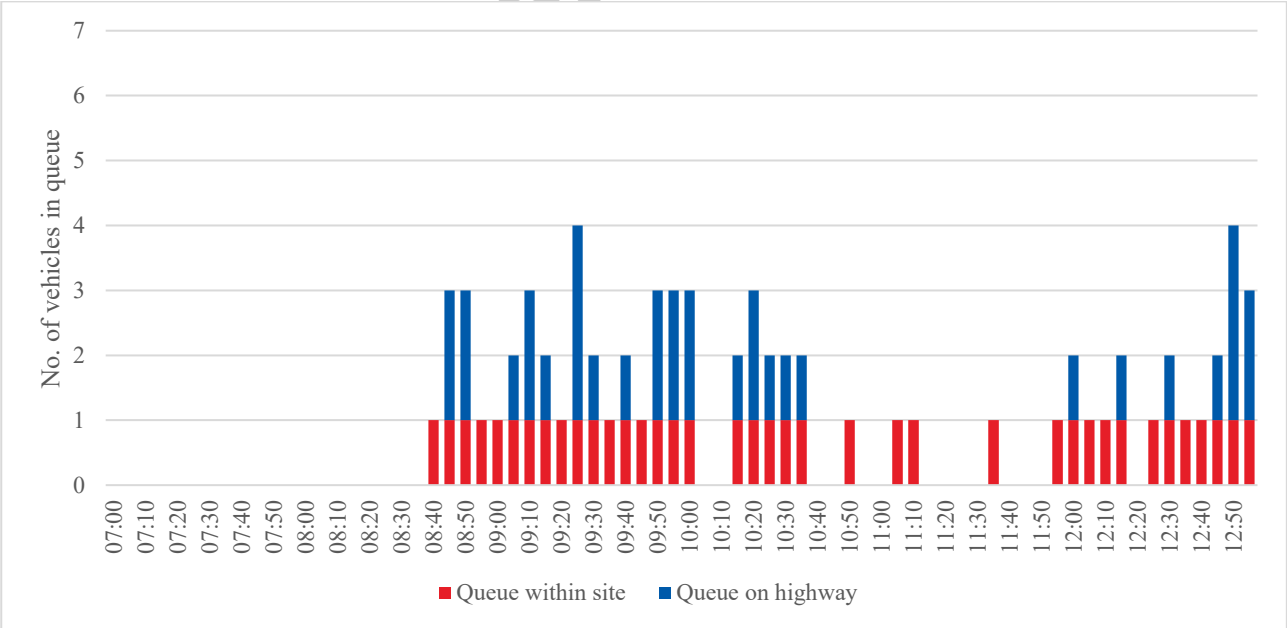

Figure 9 – Maximum queue (per 5-minute period) to enter site (8 September 2025)

3. Queue Causal Factors

The survey profiles have been reviewed to capture causal factors associated with the queuing events. The survey captured the maximum queue every five minutes to provide a regular profile of

queuing conditions across the two survey days. All vehicles are held at the stop board during the busy periods regardless of site activity.

The periods where queuing over two vehicles have been reviewed to understand the activities within the yard that caused vehicles to be delayed from entering the yard. Reviewing the time periods where queuing greater than two vehicles allows for the causal factors to be more easily identified. The preceding five-minute period has been reviewed to understand the contributing factors to the queue event.

Each of the queuing events captured in the surveys have been labelled, with the activity prior to the time period within the yard reviewed to understand why vehicles were being held.

It should be noted that during the survey period, bay occupancy was within the overall capacity. As such, it was the current operational procedure with stop board, and not the lack of bay availability that caused queuing through-out the survey period. It is noted that in the majority of instances that the bay availability would accommodate the level of queuing arrivals or significantly reduce the level of queuing that would occur.

The queue events by time period for 4 September is illustrated by Figure 10.

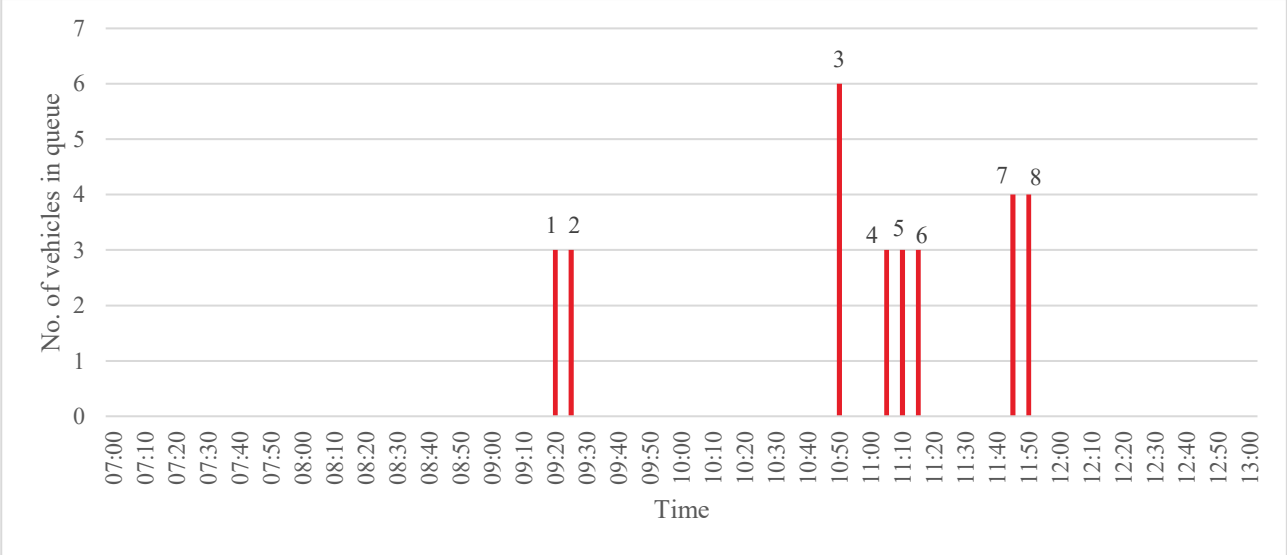

Figure 10 - Queue peaks (4 September 2025) – with event references

Table 2 provides a review of each of the yard activities prior to each queuing event. The bay availability is also indicated for reference. The causal factor for each queue event has been identified and reviewed relative to the proposed scheme to understand whether the causal factor would be removed or instances reduced. Where the causal factor would be removed or reduced, the stop board would not be needed to be deployed for protracted periods, reducing the likelihood of extensive queue formation.

ARUP

Table 2 – Queueing events and queue causal factors (4 September 2025)

Queue Event	Time	Queue from Stopboard	Bays Available	Queue Causal Factors	Applicable to future scheme?
1	09:20	3	3 (note LGV occupying 2 bays)	Forklift internal material management	No – No bulky material being stored within the yard for customer or outbound deliveries.
2	09:25	3	4 (note LGV occupying 2 bays)	Staff occupied and vehicles held at the stop board	No – All staff will be focussed on yard customer servicing
3	10:50	6	5	Forklift internal material management & Forklift transferring – customer loading materials	No – No bulky material being stored within the yard for customer or outbound deliveries. & No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
4	11:05	3	3	Forklift truck activity loading customer materials (picked from materials stored near entrance)	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
5	11:10	3	1 (note LGV occupying 2 bays)	Forklift transferring – customer loading materials	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
6	11:15	3	2 (note LGV occupying 2 bays)	All staff engaged (Bays available)	No - All staff will be focussed on yard customer servicing
7	11:45	4	6 (note OGV1 occupying 3 bays)	TP inbound materials van unloading with forklift	No – there will be no inbound TP deliveries with the future scheme requiring forklift activity or reducing bay availability
8	11:50	4	8 (note OGV1 occupying 3 bays)	TP outbound van loading with forklift	No – there will be no outbound deliveries with the future scheme requiring forklift activity or reducing bay availability

As indicated in Table 2, the current factors creating queuing events into the site, would likely to be removed for the proposed scheme.

The same exercise has been undertaken for the 8 September 2025, with the queue events marked in the queue profile in Figure 11. The queue events have then been considered in Table 3.

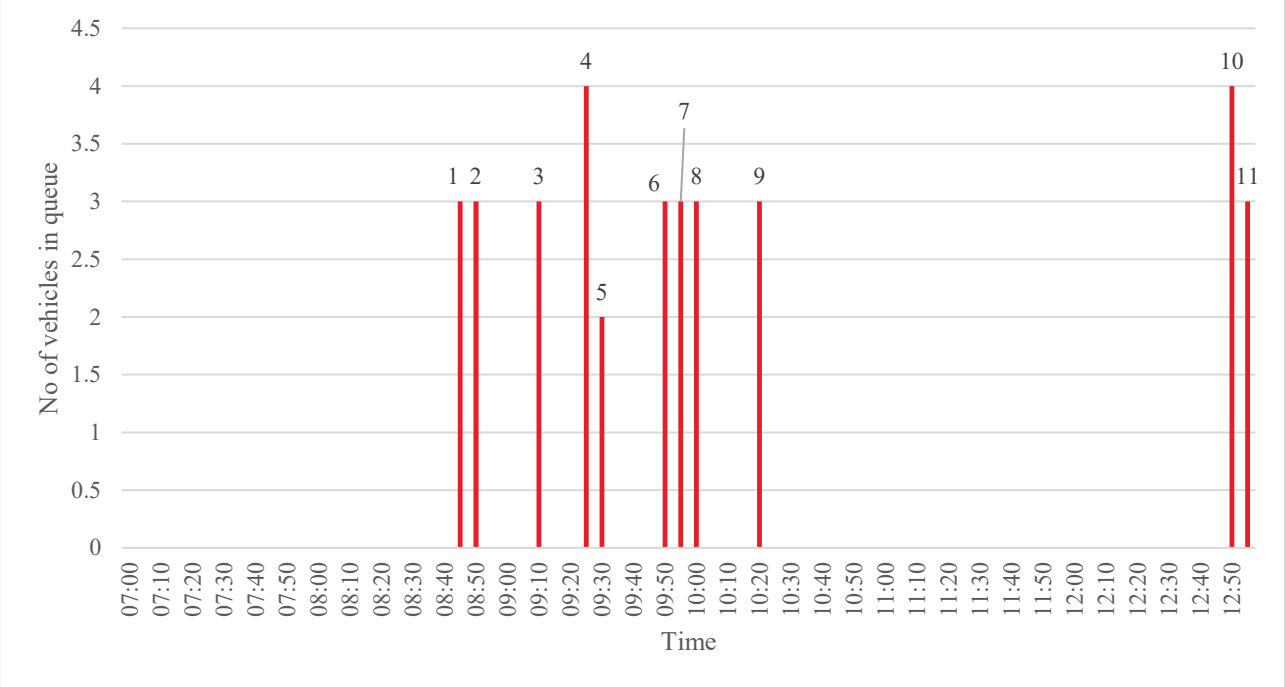

Figure 11 – Queue peaks (8 September 2025) - with event references

Table 3 – Queueing events and queue causal factors (8 September 2025)

ARUP

Queue Event	Time	Queue from Stopboard	Bays Available	Queue Causal Factor	Applicable to future scheme?
1	08:45	3	4	Forklift internal material management	No – No bulky material being stored within the yard for customer or outbound deliveries.
2	08:50	3	3	Forklift internal material management	No – No bulky material being stored within the yard for customer or outbound deliveries.
3	09:10	3	5	Forklift transferring – customer loading materials	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
4	09:25	4	0 (note Travis Perkins van occupying 2 bays)	TP outbound van loading with forklift	No – there will be no outbound deliveries with the future scheme requiring forklift activity or reducing bay availability
5	09:30	2	3 (note 2 OGV1s occupying 2 bays)	TP outbound van loading with forklift & Forklift transferring – customer loading materials	No – there will be no outbound deliveries with the future scheme requiring forklift activity or reducing bay availability & No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
6	09:50	3	3 (and 2 TP vans occupying 4 bays)	Forklift transferring – customer loading materials	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
7	09:55	3	3 (note OGV1 occupying 2 bays)	Forklift transferring – customer loading materials & TP inbound materials van unloading with forklift	No – no inbound TP deliveries with the future scheme requiring forklift activity or reducing bay availability & No – there will be no inbound deliveries with the future scheme requiring forklift activity or reducing bay availability
8	10:00	3	3 (note OGV1 occupying 2 bays)	TP inbound delivery - staff occupied with managing delivery	No – there will be no inbound deliveries with the future scheme requiring forklift activity or reducing bay availability No - All staff will be focussed on yard customer servicing

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Queue Event	Time	Queue from Stopboard	Bays Available	Queue Causal Factor	Applicable to future scheme?
9	10:20	3	4 (note OGV1 occupying 2 bays)	Staff occupied and vehicles held at the stop board	No – All staff will be focussed on yard customer servicing
10	12:50	4	4	Forklift transferring – customer loading materials	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.
11	12:55	3	6	Forklift transferring – customer loading materials	No – current inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle. Regularly required goods will sit at lower levels and can be hand-picked and trolleyed – i.e. less need for forklift deployment.

As indicated in Table 3, the current factors creating delays into the site would likely to be removed with the future scheme. In particular, of the 11no. instances of queue formation, almost half were formed by the forklift activity associated with either inbound or outbound Travis Perkins van that triggered stop board deployment. This would not occur in the future with the removal of inbound and outbound Travis Perkins deliveries during the day. Whilst forklifts would still be employed in the future site, they are likely to operate within the warehouse, with very occasional movement in the yard, for example for loading heavy materials to customer vehicles.

4. Survey Findings Overview – 4 and 8 September

The analysis of the surveys has found that there was bay availability throughout the survey period. Instances of low availability, caused by Travis Perkins vehicles associated with inbound or outbound deliveries, would not occur for the proposed scheme.

The survey provides evidence for the protracted use of the inbound vehicle stop board, predominately associated with forklift truck activity for loading / unloading materials to and from Travis Perkins vans and customers. The Travis Perkins Operation Letter estimates that forklift truck use would likely reduce by 60% with the change in site operations.

As confirmed with the Travis Perkins site manager, the timings of the outbound and inbound deliveries vary day to day, primarily subject to the delivery rounds schedule. The operations on the day of surveys happened to occur outside of the busiest arrival period. This meant that when such activities occurred, extensive queues as have been witnessed previously did not form, as inbound movements were lower.

5. Extra survey evidence

Additional surveys have been commissioned on 24 and 25 September 2025 (Wednesday and Thursday), seeking to capture extra evidence on queuing occurrences.

On 25 September, an HGV was observed to arrive at the TP yard at 10am to deliver materials to the branch. Whilst bays were available in the yard, as shown in Figure 12, the HGV was parked in the aisle of the yard to unload materials. The stop board was deployed immediately following the HGV entry to the yard.

The HGV was attended by the driver of the HGV, and a forklift was employed to carry materials from the HGV to the branch. The HGV then departed at 10:14. The stop board remained deployed during this 14-minute period. A max queue of six vehicles were observed between 10:00-10:14 when the stop board was in place (see Figure 13). Vehicles were queuing at the entrance, the hatched area on Bishops Bridge Road, and the hatched area / cycle lane north of the refuge island on Harrow Road.

Figure 12 – HGV for inbound deliveries standing in yard / forklift offloading materials – with stop board deployed

Figure 13 – Highway queue formed as a result of HGV offloading materials and stop board deployment

The extensive queue was formed due to the unloading of inbound TP deliveries that triggered stop board deployment. As discussed above, this inbound delivery arrivals will be substantially reduced

due to consolidation and will be timed to avoid busy periods (such as the instance observed on 25 September).

6. Future Site Queuing

In terms of identifying a proxy, based on the survey evidence, to forecast the future levels of queuing associated with the proposed site, the surveys analysis has been further reviewed.

It is noted that the inbound peak hour on the 4 September provides a reasonably robust basis for forecasting future queuing levels associated with the proposed scheme. On 4 September, the peak hour was between 08:10 and 09:10 and there were only low levels of queuing recorded. None of the existing queuing causal factors that currently cause the protracted use of the stop board were present (i.e. longer periods of forklift activity associated with inbound or outbound TP deliveries or loading customer vans).

ARUP

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Appendix A – Travis Perkins operational statement

ARUP

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Appendix B – Queue causal factors

Key: Queue reduction factor Queue causal factor **Primary queue causal factor**

Ref no.	Aspect	Existing – daytime (7 am to 5pm) operations	Proposed – queue reducing / removing operations	Expected improvement – leading to reduced queuing
1	Reduced branch profile	32% business is outbound deliveries on TP lorries	0% outbound deliveries	Significantly fewer (15-20) outbound vehicles per day holding inbound vehicles for protracted time period due to forklift truck movements.
2		Customers not directed to empty bays due to staff diverted to produce picking for outbound deliveries	All staff would be dedicated to fulfilment of customer collections	Inbound customer vans more readily directed to vacant bays reducing propensity to queue on street
3	Approach to deliveries / couriers and click and collect	Inbound deliveries between 0500 and 0700 hours and occasional deliveries during the day	All inbound deliveries completed before 7am	No need to restrict inbound access during the daytime due to inbound deliveries and forklift unloading
4		Inbound courier deliveries (up to ten per day)	Courrier deliveries to be consolidated at Queen Park branch, reducing unloading activity within the yard throughout the day	No need to restrict access during the daytime due to inbound courier deliveries and forklift unloading
5		Click and Collect	Click and Collect	Click and collect activity expected to increase. This would reduce customer dwell time and increase throughput.
6	Forklift activity	Inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle.	Bulky materials held at low level requiring trolley access only.	No need to restrict inbound access during the daytime due forklift loading activities
7		Inefficient layout requires product to be stored at height – requiring forklift operations between the warehouse and customer vehicle.	Fast selling products can be stored at low levels with trolley / hand transfer enabling faster customer servicing avoiding forklift operations	No need to restrict inbound access during the daytime due forklift loading activities
8	Yard designed to meet operational requirements	Bays suspended to store picked outbound materials	No outbound deliveries requiring temporary storage area	All bays would remain for customer servicing

Appendix E

Safety for Women and Girls Audit

Safety for Women and Girls

Baltic Wharf Site Audit

Kim Power, Emily Wang

8/8/2025

Background

The Proposed Development at Baltic Wharf, Paddington, comprises demolition of the existing Travis Perkins building and provision of purpose built student accommodation (PBSA), including ancillary community use, and reprovision of the Travis Perkins builders merchant at ground and mezzanine floors. Together with this building is the proposed creation of a canal side path with landscaping and other on-site public realm improvements.

A Transport Assessment (TA) was prepared and submitted as part of the planning application, which included a day time and night time Active Travel Zone assessment.

In response to the post-submission comments from Transport for London (TfL) and the findings and recommendations from the We Made That women safety audit (2024), the Applicant has commissioned a study to further review the current site surroundings and the development proposals, with a lens of Safety for Women and Girls. The aim of this study is to review the access / route choice for both day and night time, effects of the continuous canalside walkway and increased footfall in the immediate surroundings; and integration of the proposed development to the wider area and the associated public benefits.

Methodology

Baltic Wharf Site Audit

Literature Review

GLA Women's Night Safety Charter
WeMadeThat Women's Safety Audit Paddington Report
LTN 1/24 Bus User Priority
Westminster City Council Women's Safety Audit
Westminster City Plan 2019-2040
Westminster Way: Public Strategy SPD (2011)
Cities Alive Designing cities that work for woman
LLDC Creating places that work for Women and Girls
Arup Transport Assessment (May 2024) – specifically Chapter 5 Active Travel Zone (ATZ) assessment
Arup & XYX Lab Lighting Cities: Creating Safer Spaces for Women and Girls

Day and Night Site Visit

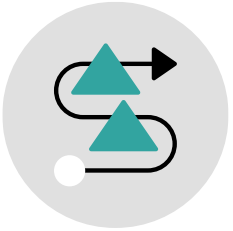
Visited site and the locations identified by WeMadeThat:
Paddington Station to Site
Rembrandt Gardens &Paddington Basin
Porteus Rd underpass
Harrow Rd to St Mary's Church & Edgeware Rd

Findings & Suggestions

OUTPUT

1. Identified planning policy to adhere to
2. Identified regulations, guidance and best practice to conform to.
3. Identify site surrounding destinations and route to destinations.

1. Validated findings from WeMadeThat
2. Identified additional areas for improvement



Wayfinding
Sightline
Signage
Route options

Design
Lighting
Function
Hiding spots
Street quality

Maintenance
Cleanliness
Passive surveillance

*The audit uses the general concept of "women" through an intersectional lens, referring to different age groups, ethnicities, religions, gender identities and expressions, socio-economic and family status, sexual orientations and those with disabilities.

Literature Review

Literature Review

WeMadeThat (2024) Audited areas

WeMadeThat audited areas

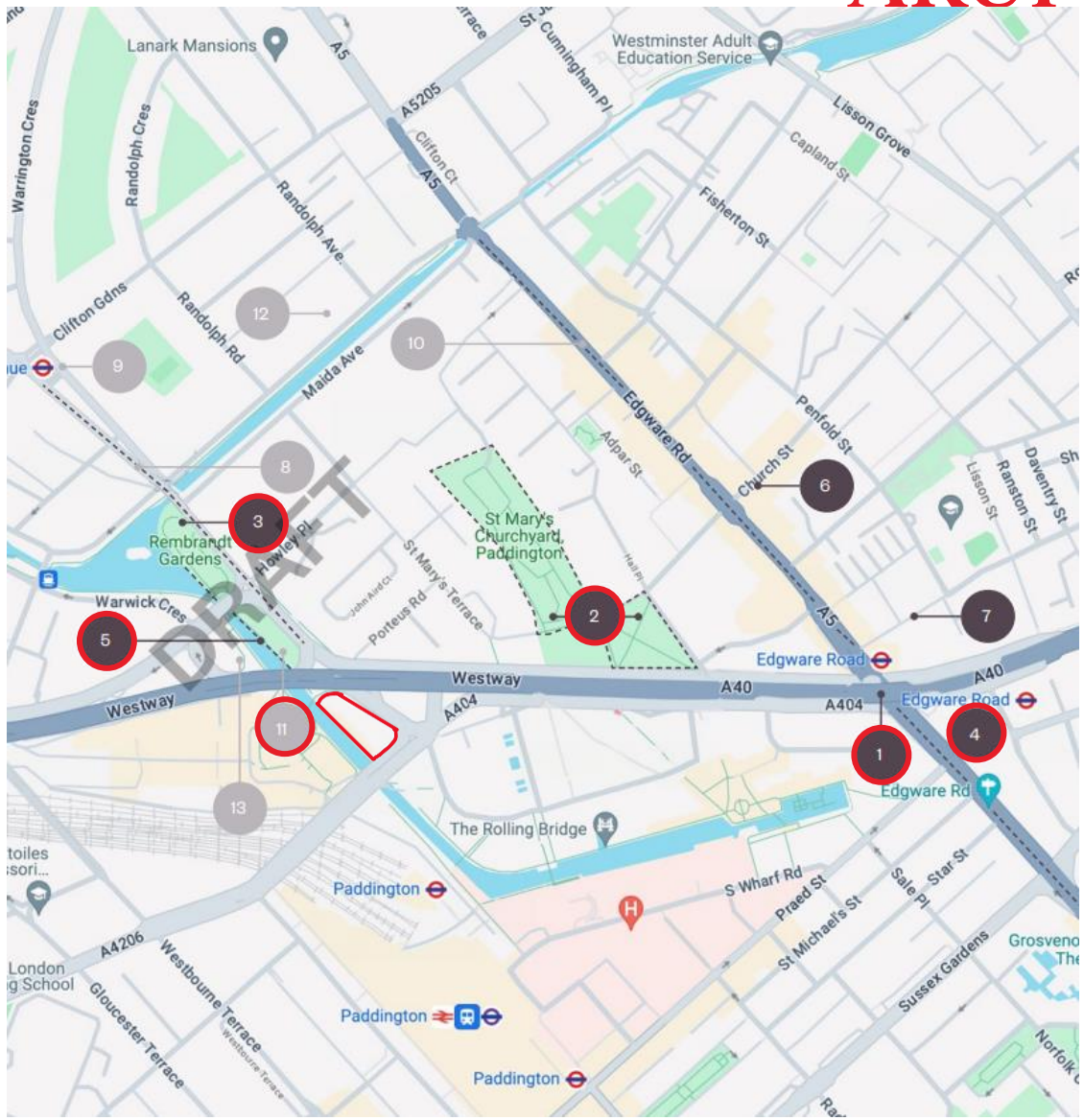
1. Marylebone Flyover / Underpass
2. St Mary's Church Yard / Paddington Green
3. Rembrandt Gardens
4. Edgware Station
5. Canal Walkways
6. Church Street / Market
7. Bell Street

*Below shows only one audit mention

8. Warwick Avenue
9. Warwick Station
10. Edgware Road
11. Stone Wharf
12. Little Venice
13. Battleship Building

Baltic Wharf Site

Relevant PBSA-related destinations

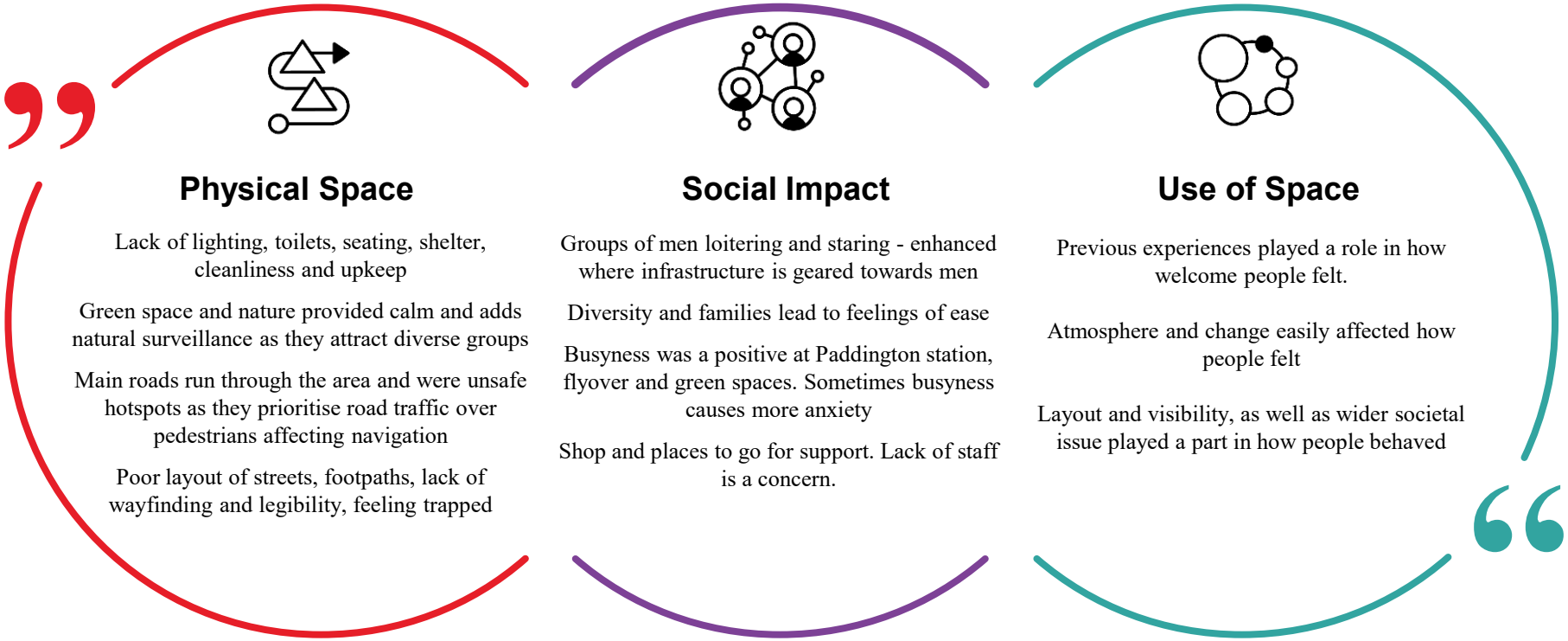


Adapted from WeMadeThat - Paddington Women's Safety Audits Pilot Project page 16

Literature Review

WeMadeThat (2024) Site Surrounding Findings

WeMadeThat has found that there is a large difference between day and night, the area is high in traffic, and has poor visibility, lighting and cleanliness.



Physical Space

Lack of lighting, toilets, seating, shelter, cleanliness and upkeep

Green space and nature provided calm and adds natural surveillance as they attract diverse groups

Main roads run through the area and were unsafe hotspots as they prioritise road traffic over pedestrians affecting navigation

Poor layout of streets, footpaths, lack of wayfinding and legibility, feeling trapped

Social Impact

Groups of men loitering and staring - enhanced where infrastructure is geared towards men

Diversity and families lead to feelings of ease

Busyness was a positive at Paddington station, flyover and green spaces. Sometimes busyness causes more anxiety

Shop and places to go for support. Lack of staff is a concern.

Use of Space

Previous experiences played a role in how welcome people felt.

Atmosphere and change easily affected how people felt

Layout and visibility, as well as wider societal issue played a part in how people behaved

Literature Review

Setting out

GLA Women's Night Safety Charter

- Can women move around or leave easily?
- Are there sufficiently lit spaces, paths and appropriate levels of CCTV?
- Is there quiet space for medical assistance or to recover?
- Is the space accessible to disabled people?
- Can people find a gender-neutral bathroom within the building?

Westminster City Plan 2019-2040

Westminster City Plan outlines target items and opportunity areas:

- Travis Perkins site presents significant opportunities for enhancing public realm, creating permeability including public access to the canal.
- Inclusive and high-quality public realm that enhances sense of place and encourages dwelling
- Reduce severance from surrounding areas including Church Street and Edgeware road.
- Improved canal side environment to strengthen links and encourage active travel to station.
- Contribute towards improved legibility and wayfinding including signage to key infrastructure, transport nodes, green spaces and canal towpaths.
- Be permeable, easy and safe to walk though, creating step free legible access and entrance, and providing direct links to other pedestrian movement corridors.
- Enable footway widening, re-surfacing, and decluttering when increased footfall is expected to be suitable for vulnerable road users.
- Creating clear sight lines, improve lighting and following design out crime principles.

Westminster City Council Women's Safety Audit (Paddington)

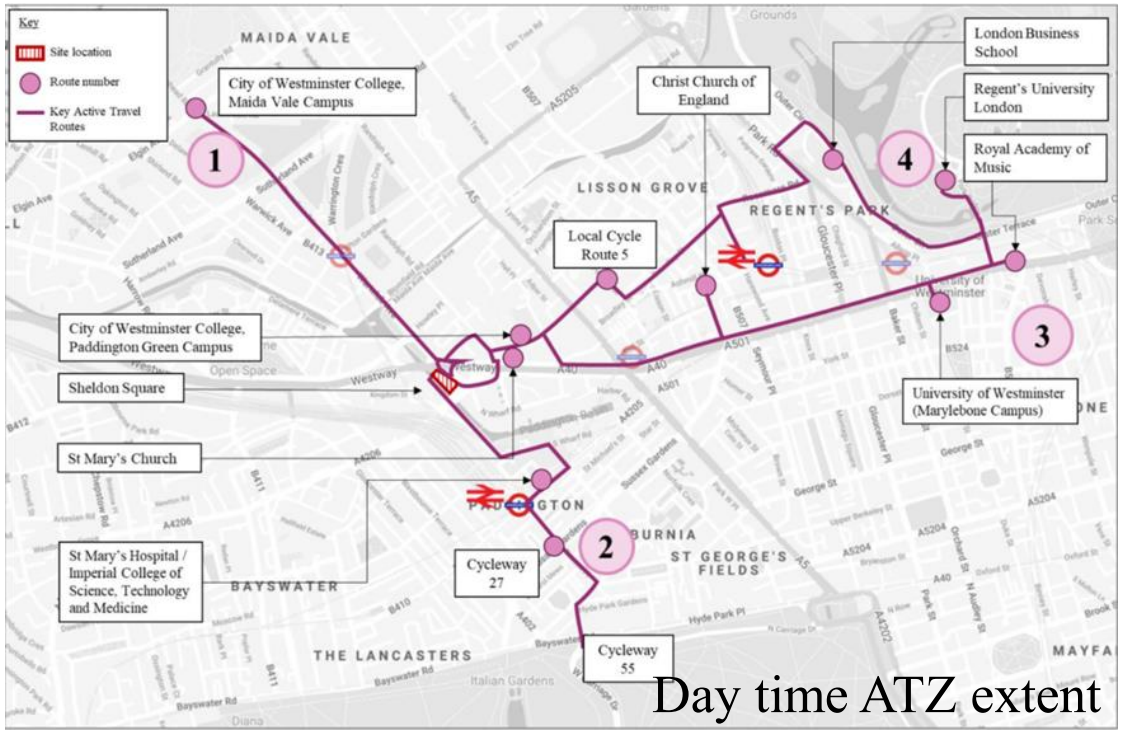
- Absence of clearly defined taxi ranks or pick-up points
- Poor quality of wayfaring information (unlit or unavailable)
- Inadequate street lighting.
- Poor sanitation such as bin bags and public urination.
- Hiding spots / obstructed view
- Need for designated meeting points and safe gathering spots.
- Absence of support staff and safety messaging.

Best Practice (Arup Research)

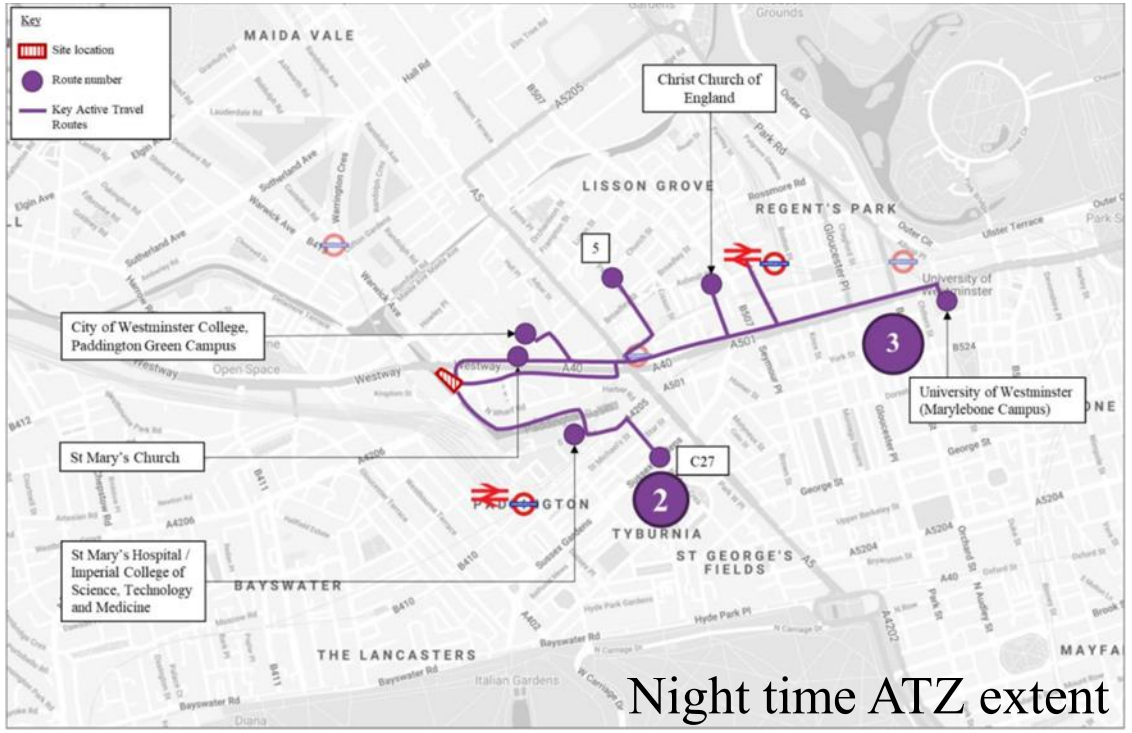
- Consistent, layered, and directed lighting.
- Active and passive surveillance from landmarks, CCTV, active frontages.
- Maintained planting.
- Good mobility infrastructure including transport hubs, help point, green space, play/quiet areas, quality street infrastructure, and signage.
- Visibility and clearly lit and marked at bridges and underpasses.
- Designing in prosocial spaces.
- Boundary treatments via planting.

ATZ assessment (Chapter 5 of the submitted TA)

Alternative routes were identified to cover the key attractors that are likely to attract active travel trips after dark.



Day time ATZ extent

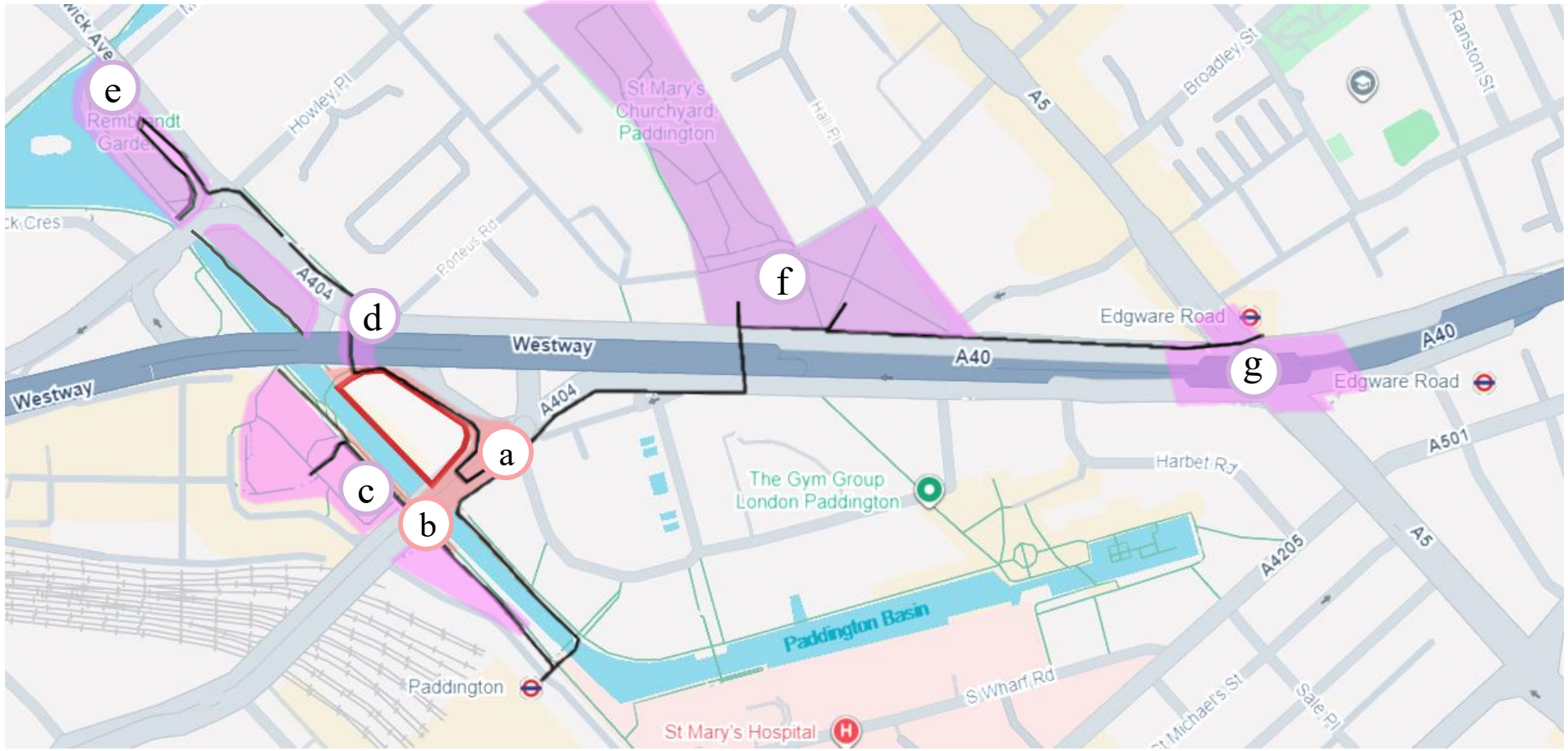


Night time ATZ extent

- An ATZ assessment was undertaken in 2024, as part of the submitted Transport Assessment. In line with the TfL's ATZ assessment guidance, the main daily active travel key destinations for students were identified and audited with a site visit.
- Alternative routes were chosen with consideration to the conditions when travelling at night, such as lighting, perception of safety and legibility of the roads. The night-time routes assessment has been accompanied by a site visit (by a male and female staff) after dark.

Audited Areas

Site and PBSA Destinations



a Harrow Road, Bishop Bridge Road & Triangular Land

b West Canal Walkways

c Paddington Station & Sheldon Square

d Porteus Road Underpass / Stone Wharf

e Rembrandt Gardens

f St Mary's Churchyard / Paddington Green

g Edgware Road Station / Marylebone Flyover

Site

Route visited

PBSA Destinations

Existing Conditions

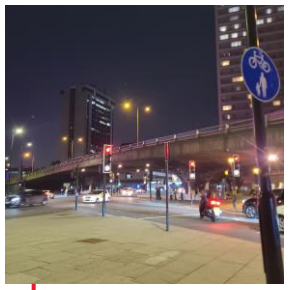
Existing Conditions

Site surrounding

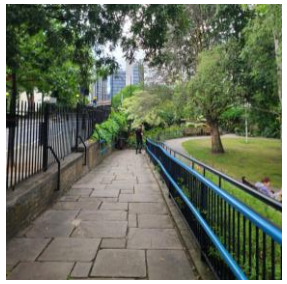
d Porteus Road Underpass / Stone Wharf

f St Mary's Churchyard / Paddington Green

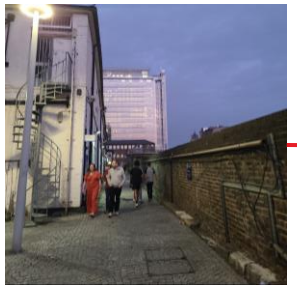
g Edgware Road Station / Marylebone Flyover

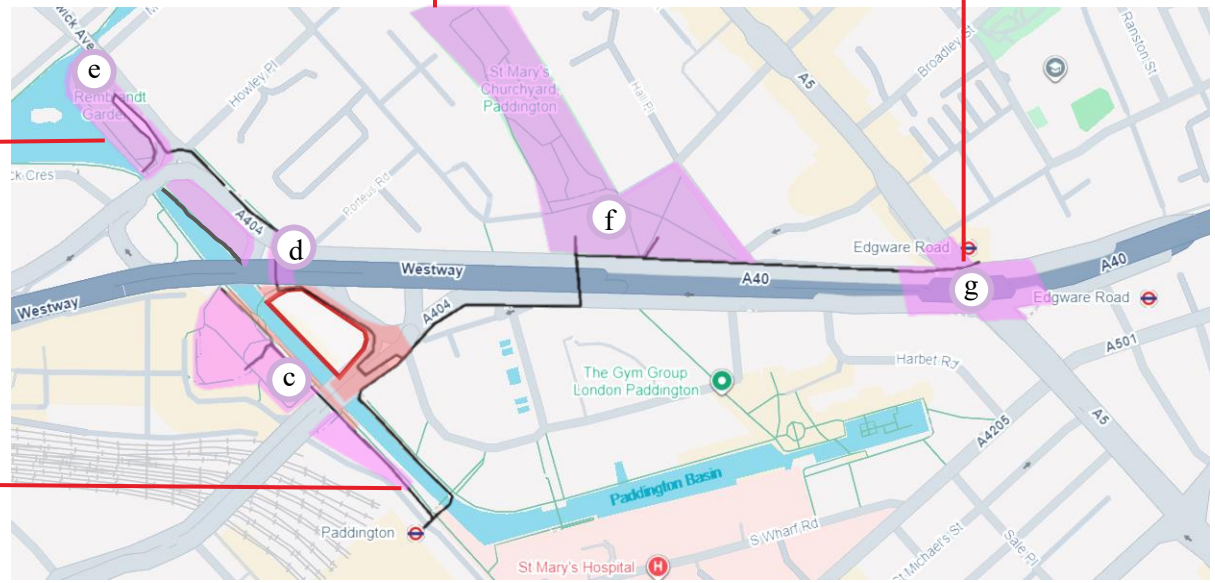


e Rembrandt Gardens



c Paddington Station & Sheldon Square





Site

Route visited

Existing Conditions

Site surrounding findings

e

- Well maintained, provide public amenities, clean, positive atmosphere and welcoming
- Diversity of people and busy in a positive way
- 4 Dead end created after gates close. Signage of park closure is not clear or lit.
- 5 At the bridge, light produces a lot of glare
- 6 Change between immediate locations. Transition to canal has poor sightline to onwards route
- Lack of staff presence

f

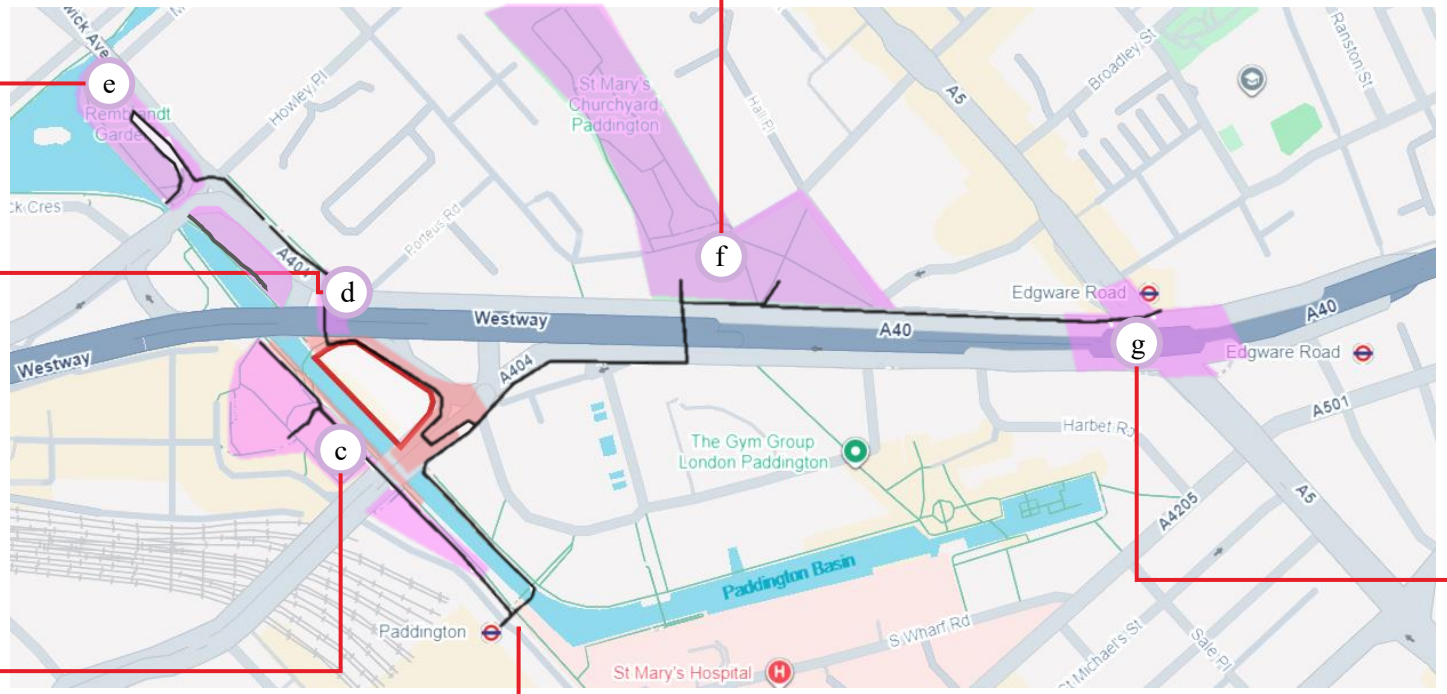
- Green space available, play area and therefore families present.
- Lacked maintenance in seating and lighting. Geared towards a less diverse range of people.
- 7 Gates act as barriers to movement and visible routes as it is difficult to detect the entrances.

d

- Bright, clean, visible and with CCTV presence at the entrance to the underpass.
- 1 Lack of street lighting uniformity on approach to the underpass creates significant contrast between the light and dark areas. Creating glare, discomfort, feeling of isolation and reduces legibility.
- 2 Immediately upon exiting the underpass to the north, there is barrier to reduce cycle speed
- 3 At a few corners in the underpass, there is no sightline and visibility to the oncoming route.

c

- Shops open till late, providing good passive surveillance.
- Provides an alternative route to Paddington station.
- This route is enclosed by walls and can create a trapped feeling.



g

- Lack of visibility, accessibility, exit routes and options.
- Groups of men loitering
- Traffic, road safety, and noise
- 8

ARUP

- Arup findings
- WeMadeThat findings
- Overlapping findings
- c Paddington Station & Sheldon Square
- d Porteus Road Underpass & Stone Wharf
- e Rembrandt Gardens
- f St Mary's Churchyard / Paddington Green
- g Edgware Road Station / Marylebone Flyover
- Site
- Route visited
- X Photo references (see slides 18-21)

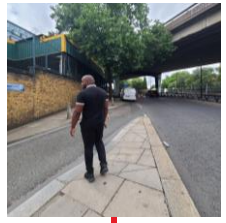
Existing Conditions

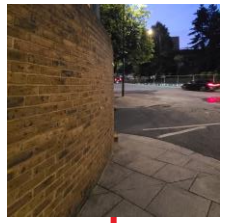
Site findings

ARUP

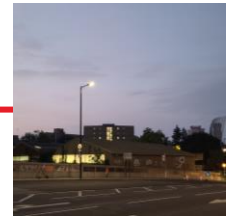
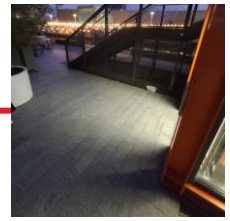
a Harrow Road, Bishop Bridge Road & Triangular Land

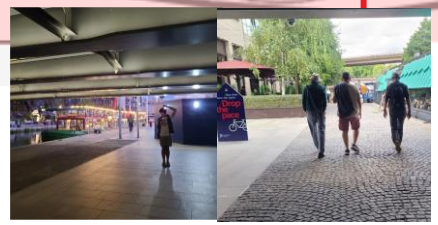
b West Canal Walkways









Existing Conditions

ARUP

a Harrow Road, Bishop Bridge Road & Triangular Land

b West Canal Walkways

Site Boundary

*Refer to page 18 for photos.

Site findings

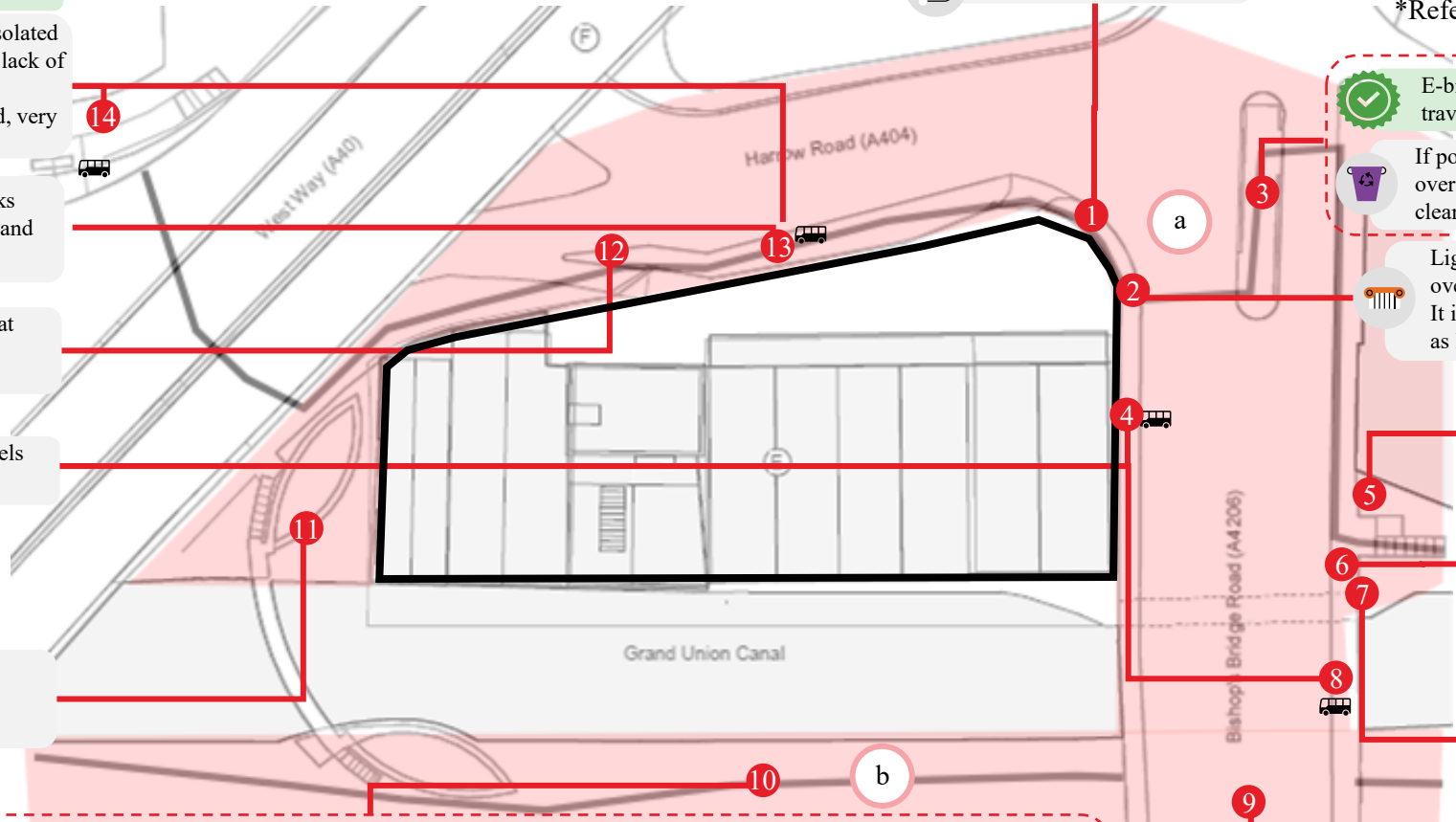
Bus shelters provide real time travel information.

Bus shelter and wider route is isolated from active frontages causing a lack of passive surveillance.
Area is also very traffic oriented, very little art and colours.

Bus shelter advertisement blocks visibility to and from the west, and also reduces width circulation.

Paving is uneven and crossing at the site vehicle exit has poor intervisibility.

Bus stop is not sheltered and feels isolating.



North landing is towards dense vegetation. This could make people feel trapped.

Approach along this corner has poor sightline to oncoming route

E-bike parking bay provides onward travel/escape option,

If poorly regulated, there is a risk of e-bikes overspilling and reducing the effective clear width of the pedestrian route .

Lighting is designed for vehicles, placed overhead and creates an isolated feeling. It is not overly welcoming for pedestrians as lighting is not at the human scale

There is a dead space adjacent to lift with limited natural surveillance that people can hide in.

The route reaches a dead end, there is a single escape point via a flight of steps.

Existing bench blocks path along the canal edge if this path is to open.

CCTV totems present along the canal walkway.

Restaurants provide good active frontage during night and day.

Planting and furniture alcoves could create hiding spots where sightlines are not clear. There are also no natural surveillance from the opposite side of the canal.

There is limited route choice. On the route cobbles are present, which are uncomfortable for women with heels, buggies and wheelchair users. Some smooth sections are available but using them reduce sightline and pushes you into a corner.

Artwork and lighting feature under the bridge is soft and comforting.

Improvements to site

Improvements to scheme and beyond

ARUP

Previous discussions

Further commentary

Immediate to site

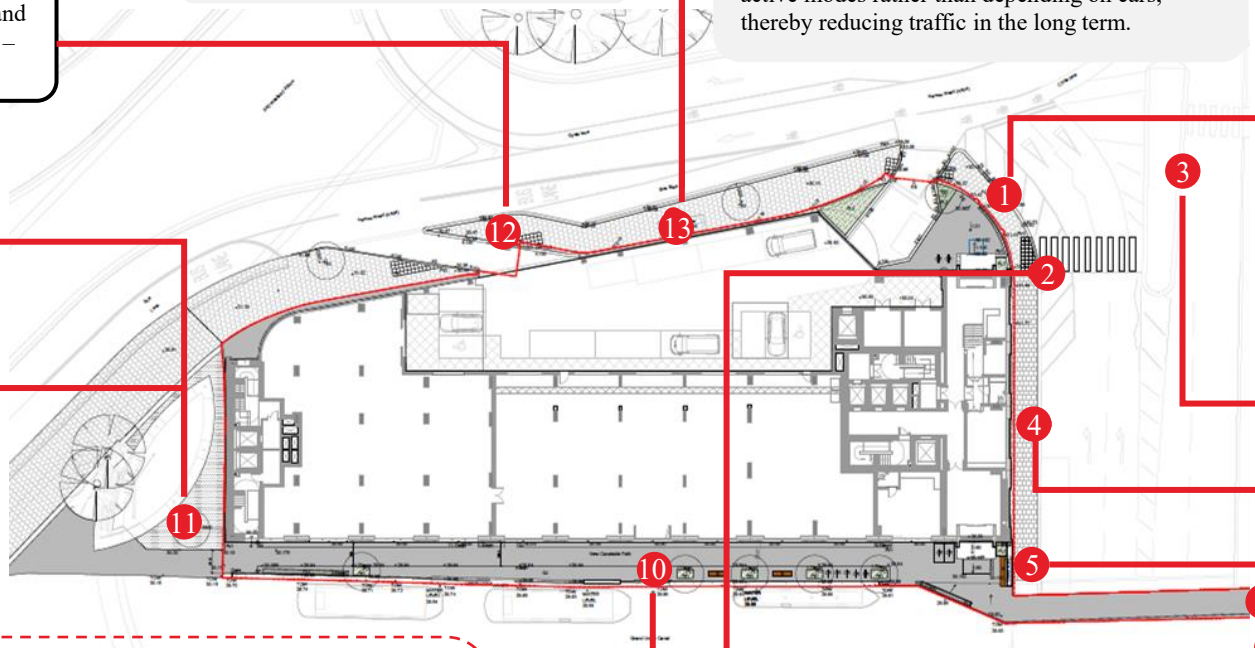
Public realm enhancements, footway resurfacing and improvements to vehicular access / egress points – improving pedestrian safety.

Opportunity to relocate the bus shelter to the back of the footway is being explored.

The development may increase the level of activities and footfall in the area. The sustainable location would encourage site users to travel by active modes rather than depending on cars, thereby reducing traffic in the long term.

Potential public realm enhancement at Porteus Road underpass

Potential public realm enhancement at triangular land such as public art, lighting and improved landscaping



People entering and leaving the building will provide more passive surveillance.

Improved sightline through lowered façade and well lit entrance.

Harrow Road entrance redesigned to create a safe, landscaped, well-lit arrival space for PBSA students with active surveillance after dark

PBSA entrance is well lit and staffed* to ensure safety

Introduction of accommodation will help remove and use existing daytime dockless bikes.

Removal of parapet wall, with passive surveillance provided by PBSA building

Bishops Bridge Road parapet to be 'opened up' to allow better visibility from bridge level to canal level.

Opening up of canalside path to provide continuous connection along east of Basin

Increased footfall / level of activity at the northern end with the new canalside connection

New canalside path with new tree planting / green space and lighting

Active frontage along canalside path with TP branch and community space access

PBSA access onto canalside path; on-site personnel* present at all times

New canalside path will provide smooth paving, providing an alternative route for women with prams, heels or wheelchair users.

New canalside path will provide alternative route, sightlines and passive surveillance to existing alcoves across the canal.

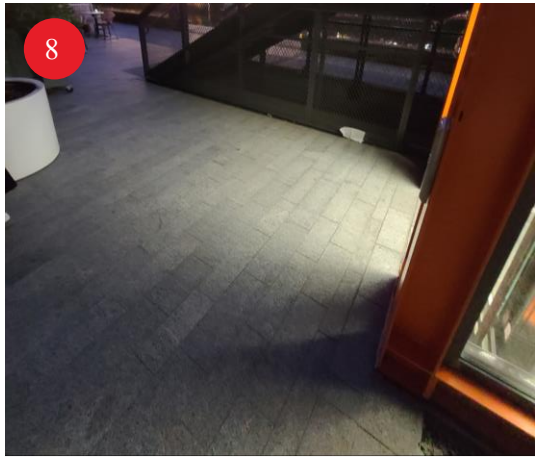
Façade lighting from the building will provide multiple layers of softer lighting to reduce feeling of isolation.

*Refer to page 13 for Women and Girls Safety audit summary, and page 18 for photos.

Further opportunities

Site

Further Opportunity



Isolated lift

There is a dead space to the north of the lift that someone can hide in or loiter.

Perception of this space could be improved by gating off (or equivalent) the unused area to prevent people from entering.

Bus shelter

Bus shelter on Harrow Road, both its position and the advertising panel, reduces the approach visibility, creates a space to hide.

The opaque panel could be replaced with a clear panel.

Benches along routes

When the new canal side path opens, the bench reduces the openness of the route. Making women feel restricted and having to walk directly past people sitting on benches.

The bench closest to the bridge should be removed / relocated.

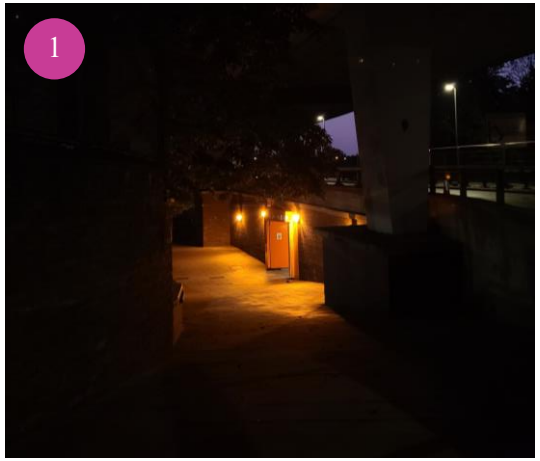
Isolated bus stops

The two bus stops on the bridge feel very isolated.

Feeling of isolation can be reduced by providing artwork and lighting on the bridge. The removal of the parapet wall (referenced on page 16) will also reduce feelings of isolation.

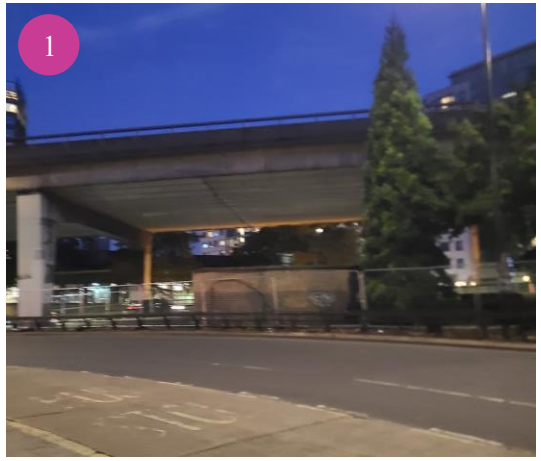
Surrounding interest sites

Porteus Road underpass, Paddington Central footbridge & Stone Wharf



Uneven lighting

The underpass is very well lit, but the approach is not. The high contrast of lighting creates feeling of isolation and reduces sight. By providing smooth transitional lighting upon approaches on both sides, it will drastically improve perception of safety.



Lighting at flyover

Improved lighting underneath flyovers could improve a sense of welcome, visibility and safety for surrounding areas that currently feel isolating. Recommend providing light projections or uplighters.

Restricted exit

Immediately upon exiting the underpass, there is barrier to reduce cycle speed. This should be replaced with less restrictive measures such as bollards to allow pedestrian to move through quickly.

Hidden corners

Underpass is well lit but still presents some hidden corners. This could be mitigated by providing angled mirrors where there are bends.

The addition of lighting in the central portion can also improve perceptions of safety.

Surrounding interest sites

Rembrandt Gardens & East canal walkway

Dead end

There are signs indicating when the Garden is closed but they are not clear. If people walk through the bridge at night intending to pass through the garden, there is no way out.

More visible, and well lit signage should be provided east of the bridge to show that a dead end is being approached.

Under bridge lighting

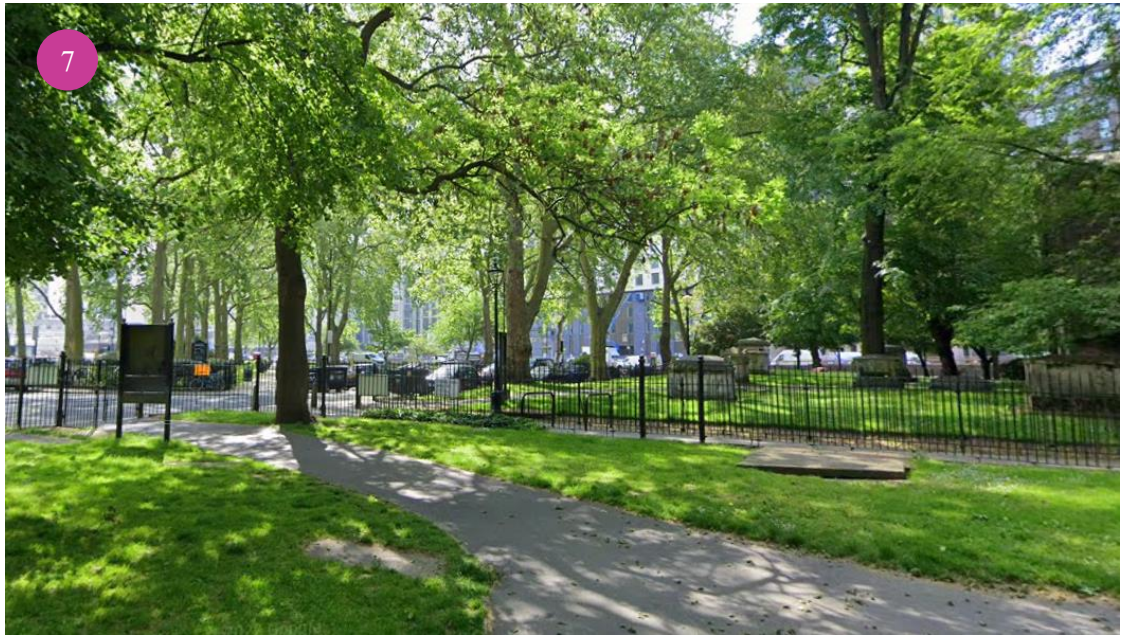
The lighting below the bridge are very bright and creates glare, making it difficult to see surrounding and faces. Smoother transitional lighting or light shades could be provided to create a nicer environment, together with lighting at different levels and colours.

Transition from Garden

Rembrandt Garden is a very nice environment but there is a drastic change when exiting on the canal side. No sightline to the left path is available and is unable to see oncoming people or cyclists. A mirror could be provided on the tree to provide better visibility.

Surrounding interest sites

Harrow Road to St Mary's Churchyard / Paddington Green



Unclear entrance

Entrance during the day is difficult to locate as the gate blends in with the surrounding. Provision of better marked entrance such as through paint or landmarks can improve visible routes for improved navigation.

Edgware Road Station / Marylebone Flyover

Busy highway

Existing planting in above image improves pedestrian experience for women by providing more protection from highway. More grass cover or low level planting could be provided on wider sections of footways, along Harrow Road close to busy motorways, to improve pedestrian experience.

Appendix F

Cycle lift breakdown strategy

Unite Students

Cycle lift maintenance

N

In the event of a lift breaking or requiring maintenance, Unite Students has a service arrangement with a lift maintenance company where any issues are responded to within two hours.

Should the cycle lift be out of service, a passenger lift can be used by cyclists. Bikes would need to be lifted vertically to enable their movement within the lift car. This lift will be supplied with hooks and additional protection drapes for these limited periods of time.

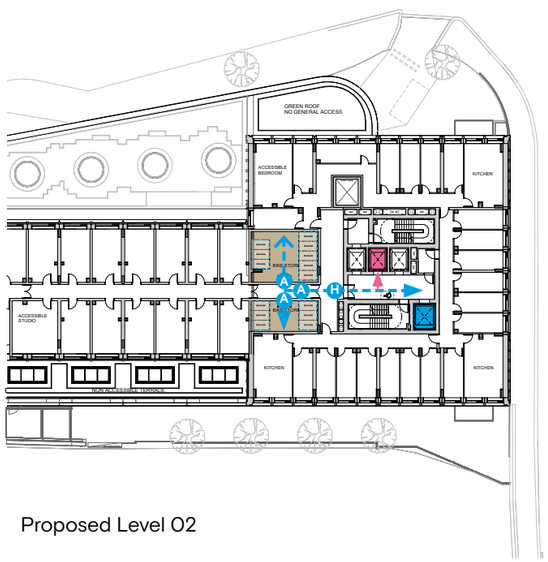
Cycle storage lift

Alternative lift access

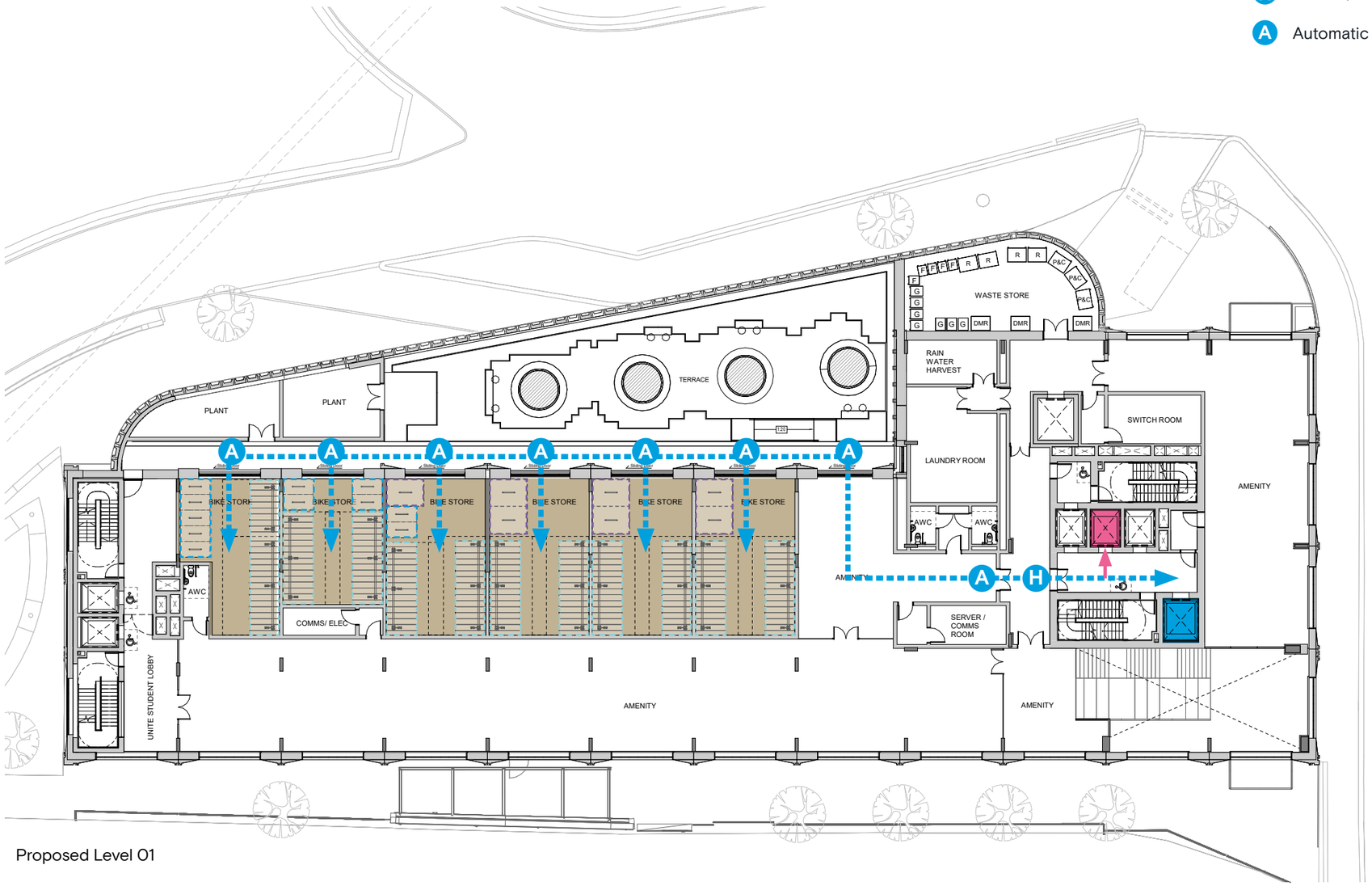
Access route

H Hold-open doors

A Automatic doors



Proposed Level 02



Proposed Level 01

Appendix G

Stage 1 Road Safety Audit

ARUP

ACORNS PROJECTS LIMITED

Baltic Wharf, Paddington, City of Westminster

Proposed Site Access Arrangements and Pedal Cycle Facilities

Stage 1 Road Safety Audit

Ref:BalticWharfPaddingtonCityofWestminsterStage1RSAV2.0FINAL

Prepared for: **Arup, 8 Fitzroy Street, London, W1T 4BJ.**

By: **Acorns Projects Limited - Safety Traffic Project Management & Highway Engineering Consultants**

Prepared by: Adriano B. Cappella, Audit Team Leader

Checked by: Lisa Allen, Audit Team Member

Approved by: Adriano B. Cappella

Version	Status	Date
1.0	DRAFT	09-10-2025
2.0	**FINAL**	**09-10-2025**

1.0 INTRODUCTION

1.1 Commission

1.1.1 This report results from a Stage 1 Road Safety Audit carried out on the Baltic Wharf, Paddington, City of Westminster, Proposed Site Access Arrangements and Pedal Cycle Facilities proposals.

1.1.2 The Audit was undertaken by Acorns Projects Limited in accordance with the Audit Brief issued by Arup on behalf of the Client Organisation's on the 26th September 2025. It took place at the Eaton Bray offices of Acorns Projects Limited during October 2025 and comprised an examination of the documents provided as listed in Appendix A, plus a visit to the site of the proposed scheme.

1.1.3 A visit to the site of the proposed scheme was made on the 2nd October 2025. During the site visit, the weather was mild, grey and overcast and the existing road surface was dry.

1.2 Terms of Reference

1.2.1 The Terms of Reference of this Audit are as described in TfL Procedure SQA-0170 dated May 2014. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and how it impacts on all road users and has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical audit. An absence of comment relating to specific road users/modes in Section 3 of this report does not imply that they have not been considered; instead the Audit Team feels they are not adversely affected by the proposed changes.

1.2.2 This Safety Audit is not intended to identify pre-existing hazards which remain unchanged due to the proposals; hence they will not be raised in Section 3 of this report as they fall outside the remit of Road Safety Audit in general as specified in the procedure SQA-0170 dated May 2014. Safety issues identified during the Audit and site visit that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in Section 4 of this report.

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

1.2.4 In accordance with TfL Procedure SQA-0170 dated May 2014, this Audit has a maximum shelf life of 2 years. If the scheme does not progress to the next stage in its development within this period, then the scheme should be re-audited.

1.2.5 Unless general to the scheme, all comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan located in Appendix B.

1.2.6 It is the responsibility of the Design Organisation to complete the Designer's response section of this Audit report. Where applicable and necessary it is the responsibility of the Client Organisations to complete the Client's comment section of this Audit report. Signatures from both the Design Organisation and Client Organisation must be added within Section 5 of this Audit report. A copy of which must be returned to the Audit Team.

1.3 Main Parties to the Audit

1.3.1 Primary Client Organisation

Client contact details for Westminster City Council: Ian Morrison - Highways Officer - Westminster City Council, City Highways, Environment & Communities, 13th Floor City Hall, 64 Victoria Street, London, SW1E 6QP (imorrison@westminster.gov.uk).

1.3.2 Secondary Client Organisation

Client contact details for Transport for London: Lucy Simpson - Principal Technical Planner - Transport for London, Spatial Planning, 5 Endeavour Square, Westfield Avenue, Stratford, London, E20 1JN (lucy.simpson@TfL.gov.uk).

1.3.3 Design Organisation

Design contact details: Andy Ford - Associate Director - Arup, 8 Fitzroy Street, London, W1T 4BJ (Andy.Ford@arup.com).

1.3.4 Audit Team Approval

The Audit Team specified in 1.3.4 below were given approval to undertake this Audit by Christopher Gooch, Senior Engineer (Road Safety Audit), Highways and Traffic, TfL Engineering, on the 24th September 2025.

1.3.5 Audit Team

Audit Team Leader:	Adriano B. Cappella - Acorns Projects Limited
Audit Team Member:	Lisa Allen - Acorns Projects Limited
Audit Team Observer:	None

1.3.6 Other Specialist Advisors

Specialist Advisor Details:	None

1.4 Purpose of the Scheme

1.4.1 Demolition of the existing building(s) hosting a Travis Perkins builders' merchant and erection of a building between 4-20 storeys in height to accommodate the reprovision of the Travis Perkins at ground and mezzanine levels and purpose-built student accommodation (PBSA) above with associated landscaping and public realm improvements. As part of the project, revised site access and egress arrangements and public realm improvements are proposed, together with improvements for pedal cyclists, couriers (e-bikes and mopeds), at the Harrow Road site entrance area, of which two options have been provided for review at this Stage 1 Road Safety Audit.

1.5 Special Considerations

1.5.1 The Audit Team has no special considerations to raise.

2.0 ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS

2.1 The Audit Team is not aware of any other Audits having been carried out on the proposals.

3.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

3.1 The Audit Team has not identified any features of the scheme that could be removed or modified in order to improve the road safety of the measures.

End of Report - No Problems identified or Recommendations offered in this Stage 1 Road Safety Audit

4.0 ISSUES IDENTIFIED DURING THE STAGE 1 ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 The Audit Team has no issues to raise within this section.

5.0 SIGNATURES AND SIGN-OFF

5.1 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and documents listed in Appendix A. to this Safety Audit report. The Road Safety Audit has been carried out in accordance with TfL Procedure SQA-0170 dated May 2014, with the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the measures. The problems identified have been noted in this report together with associated suggestions for safety improvements that we recommend should be studied for implementation.

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

AUDIT TEAM LEADER:

Name: Adriano B. Cappella Signed: *A. B. Cappella*
IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency

Position: Director Date: 9th October 2025

Organisation: Acorns Projects Limited

Address: Redwood House, 3 Eaton Park, Eaton Bray, Bedfordshire, LU6 2SP

Contact: abc@acornsprojects.com 01525 222359 or 07860 629328

AUDIT TEAM MEMBER:

Name: Lisa Allen Signed: *Lisa Allen*
MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency

Position: Associate Consultant Date: 9th October 2025

Organisation: Acorns Projects Limited

Address: Redwood House, 3 Eaton Park, Eaton Bray, Bedfordshire, LU6 2SP

Contact: abc@acornsprojects.com 01525 222359 or 07860 629328

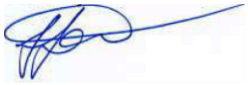
5.2 DESIGN TEAM STATEMENT

In accordance with SQA-0170 dated May 2014, I certify that I have reviewed the items raised in this Stage 1 Road Safety Audit report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Client Organisations endorsement of my proposals.

Name: Andy Ford

Position: Associate Director

Organisation: Arup, 8 Fitzroy Street, London, W1T 4BJ.

Signed:  **Dated: 13 October 2025**

5.3 PRIMARY CLIENT ORGANISATION STATEMENT (WESTMINSTER CITY COUNCIL)

I accept these proposals by the Design Organisation.

Name: Ian Morrison

Position: Highways Officer

Organisation: Westminster City Council, City Highways, Environment & Communities, 13th Floor City Hall, 64 Victoria Street, London, SW1E 6QP.

Signed: **Dated: ???? October 2025**

5.4 SECONDARY CLIENT ORGANISATION STATEMENT (TRANSPORT FOR LONDON)

I accept these proposals by the Design Organisation.

Name: Lucy Simpson

Position: Principal Technical Planner

Organisation: Transport for London, Spatial Planning, 5 Endeavour Square, Westfield Avenue, Stratford, London, E20 1JN.

Signed: **Dated: ???? October 2025**

APPENDIX A

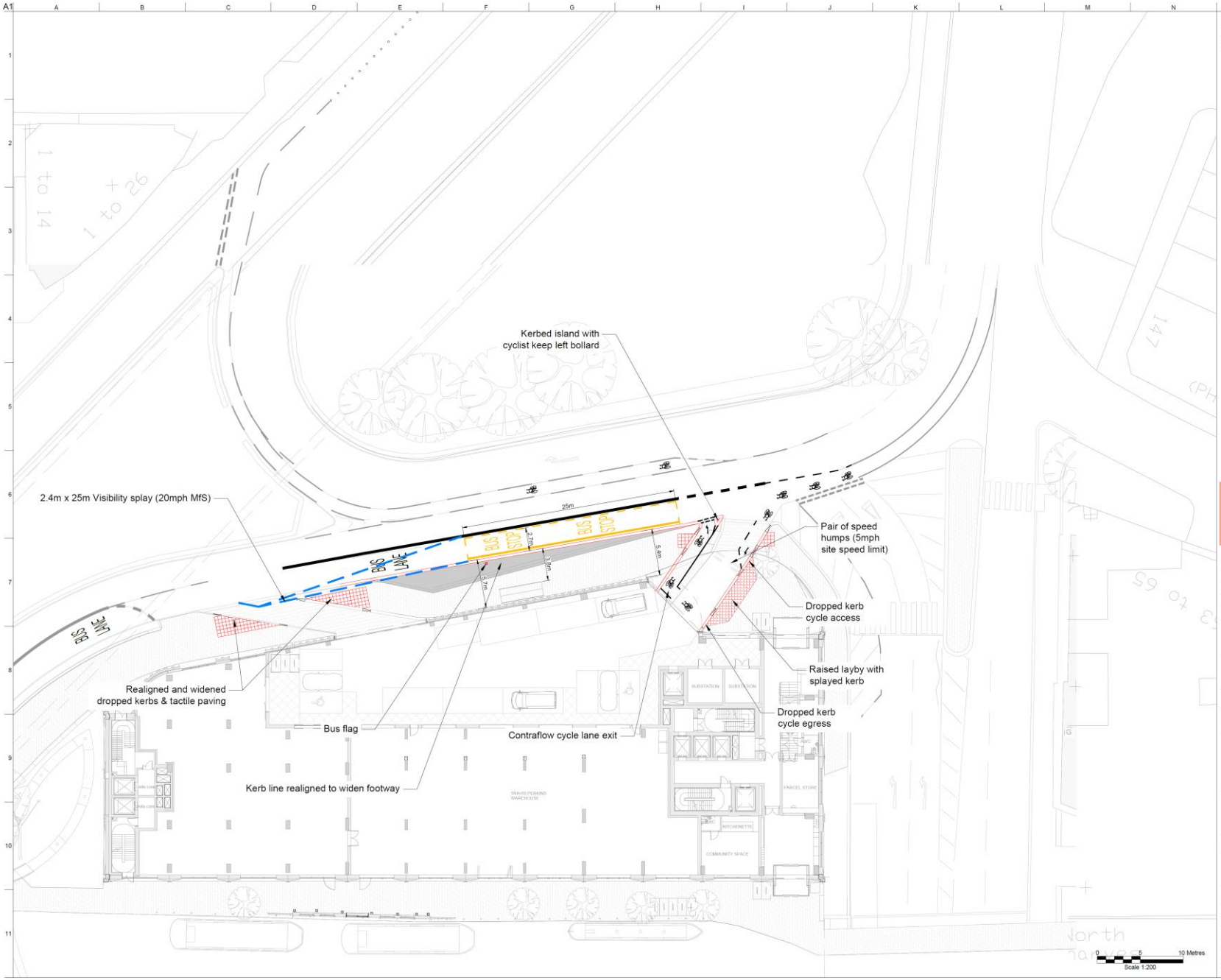
Documents Forming the Audit Brief

DRAWING NUMBER	DRAWING TITLE
274835-42-SK-64 Rev F	Revised Highways Arrangement
274835-42-SK-68 Rev B	Revised Highways Arrangement - Option 2
274835-42-SK-66 Rev C	Swept Path Analysis (Buses, Artics and Saloon Car)

DOCUMENTS	DETAILS (where appropriate)
X Safety Audit Brief	Dated 26-09-2025
X Detailed Road Safety Audit Brief	Baltic Wharf Stage 1 RSA Brief Dated 19-09-2025
☐ Site Location Plan	
☐ Traffic signal details	
☐ TfL signal safety checklist	
☐ Departures from standard	
☐ Previous Road Safety Audits	
☐ Previous Designer Responses	
☐ Collision data	
X Collision plot	TfL Collision Plot dated 28-02-2024
X Traffic flow/modelling data	Within the E-Mail Dated 12-09-2025
X Pedestrian flow/modelling data	Within the E-Mail Dated 12-09-2025
☐ Speed survey data	
☐ Other documents	

APPENDIX B

Highways Arrangement Plans for Context Purposes Only



Notes

Existing and proposed road markings are indicative only

DRAFT

Rev	Date	By	Chkd	Appd
F	30/09/25	RJM	SY	AF
E	12/09/25	RJM	SY	AF
D	05/09/25	RJM	SY	AF
C	04/09/25	RJM	SY	AF
B	03/09/25	RJM	SY	AF
A	26/08/25	RJM	SY	AF

ARUP

13 Fitzroy Street
London W1T 4BQ
Tel +44(0)20 7636 1531 Fax +44(0)20 7580 3924
www.arup.com

Client
Unite Students

Project Title
Unite Paddington

Drawing Title
Revised Highways Arrangement

Scale at A1 1:200

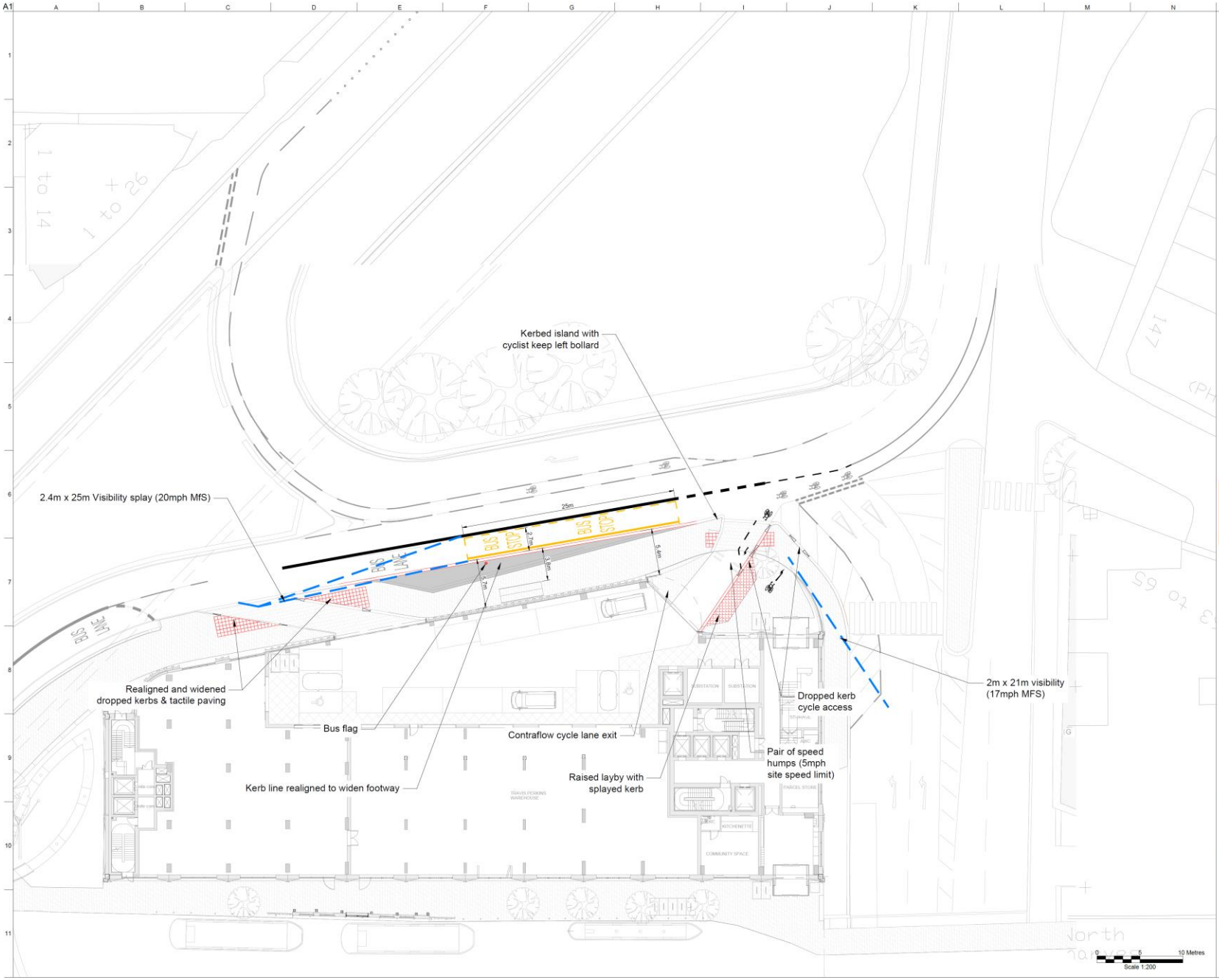
Role Transport

Suitability - For Inormation -

Arup Job No 602563-42

Rev F

Name 274835-42-SK-64



Notes

Existing and proposed road markings are indicative only

DRAFT

Rev	Date	By	Chkd	Appd
B	30/09/25	RJM	SY	AF
A	12/09/25	RJM	SY	AF

ARUP

13 Fitzroy Street
London W1T 4BQ
Tel +44(0)20 7636 1531 Fax +44(0)20 7580 3924
www.arup.com

Client: Unite Students

Project Title: Unite Paddington

Drawing Title: Revised Highways Arrangement Option 2

Scale at A1: 1:200

Role: Transport

Suitability: - For Inormation -

Arup Job No: 602563-42

Rev: B

Name: 274835-42-SK-68

Appendix H

TRICS Servicing & Deliveries Report (2025)

TRICS Consortium Limited

Servicing & Deliveries at Residential Apartments in London

TRICS Research Report 25/2

June 2025

Ian Coles
Managing Director
TRICS Consortium Limited

Contents

Figures

Tables

1. Foreword

Stantec's Movement and Technology Team have enjoyed collaborating with TRICS in this vital research to better understand how servicing and deliveries occur at residential apartments. This research provides valuable insight, covering everything from waste and recycling to food and drink deliveries. It highlights delivery and servicing trips, patterns, and trends. And the findings help identify key issues and challenges, such as the need to avoid missed deliveries.

It can be easy to forget the vast and complex systems that enable goods and services being delivered to homes as quickly and easily as they are today. The Chartered Institute of Logistics and Transport (CILT) has developed the 7Rs to define logistics: getting the Right product, in the Right quantity, in the Right condition, at the Right place, at the Right time, to the Right customer, at the Right price.

At some point, the goods and services we need on a daily basis are part of a supply chain and can be considered as freight. It's often thought of as something that happens in the background, and it's usually only the negative aspects that are noticed, especially in urban areas – large vehicles, noise, pollution, conflict with other road users, especially cyclists and pedestrians. However, freight and logistics underpin almost everything we do, and the smooth running of the UK's day to day operations is dependent on the efficient movement of goods and services.

The pandemic brought about five years of growth in e-commerce in just two years. Online retail sales grew from around 20% and peaked at nearly 40% of total sales. They have now rebalanced at around 25%, with peaks in sales around Christmas*. This obviously has knock-on effects for supply chains, demand for warehouse space, vehicle numbers and types, particularly the rise of cargo bikes (in all their various forms), but also on our high streets and residential developments, i.e., how we receive goods. The growth in e-commerce in the business-to-customer (B2C) sector has fractured some supply chains. Due to the sheer volume of items and drop density, the model has moved from hub-and-spoke to more of a spider's web, with fulfilment centres (including 'dark kitchens') located closer to the end destination.

One aspect that immediately jumps out from this research is the vast quantity of fast-food deliveries we now generate, consistently recorded as around 50% of all deliveries across the individual sites. It's clear that food delivery apps make it incredibly easy to get (nearly) whatever food you desire delivered directly to you.

Understanding this delivery and servicing activity in the context of urban residential developments is crucial. This is where we believe this research can help. By identifying the how, what, where, and when in greater detail, we can take a more analytical approach with greater impact on planning and managing this activity effectively and efficiently at residential developments.

The next step? Innovative thinking from us here at Stantec, in partnership with others, to help shape the solutions to these challenges outlined here. And our Movement and Technology Team are up for the challenge.

I would like to take this opportunity to congratulate Ian, Owen, Harry, and the other contributors for successfully delivering this important research, which I know will prove valuable to many in the transport planning industry.

Tim Hapgood
Senior Associate, Stantec

* Internet sales as a percentage of total retail sales (ratio) (%) – Office for National Statistics

2. Executive Summary

2.1. The question of what are the levels of Servicing and Delivery trips at developments of residential apartments has been asked a number of times by various members of the TRICS Community. This Research Project tackles this question through the application of enhanced multi-modal TRICS surveys with an additional and comprehensive focus on all types of Servicing and Delivery, including Dwell Times, at three residential apartment developments in London.

2.2. For the enhanced surveys necessary to take place to capture all Servicing and Delivery trips, with this required to be observable so that it could be broken down by both Servicing Vehicle and Servicing Activity types, it was important to establish an inclusion criteria which meant that the results would be robust with a high level of confidence.

2.3. Although this research essentially consists of three "case studies" at separate residential apartment developments in Central and Inner London, with the survey results presented together for comparative purposes, TRICS considers that the wealth of data that has been obtained, covering all types of Servicing and Deliveries, constitutes a good source of information, reference and guidance, when considering Servicing and Delivery trips for developments in other parts of the UK and Ireland.

2.4. This was the first TRICS Research Project which included a "Sponsor and Review" element, whereby an external organisation (or organisations) participate from the outset by providing their technical expertise through a study's planning and analysis stages, also providing comments on the final report. We thank Stantec for being the first organisation to take up this opportunity and for their Sponsor and Review contribution.

2.5. For this study, it was important to create and define the various Servicing Activity sub-categories. This was important to achieve the study's objective of a comprehensive analysis of Servicing and Deliveries that allowed for a wide variety of analyses to be undertaken. The Servicing Activity types defined were Utility, Fast Food, Supermarkets & Groceries, Courier & Mail, Homeware, and Waste & Recycling.

2.6. The TRICS Servicing Vehicles count is broken down into OGV(1), OGV(2), LGVs, Cars and Motorcycles. It should be noted that it does not include Pedal Cycles or any other mode of transport. For this study, it was important to also include Pedal Cycles as a Servicing Vehicle type, along with Cargo Bikes, so that the Servicing and Delivery trips at the three developments being surveyed would be fully comprehensive.

2.7. The search for suitable developments for this study was based on a criteria which was designed to provide sites which could be fully observable and not overly complex, whilst being of significant scale to provide robustness of results. It was highly important that candidate developments met this criteria so to ensure that the surveys could be undertaken with minimum risk and yielding high levels of accuracy. The final three selected developments were Canaletto Tower in Islington, Porter's Edge in Surrey Quays and Bowl Court in Shoreditch.

2.8. To collect all of the important data for this study, it was necessary to adapt the standard multi-modal TRICS data collection methodology. Although a full and standard multi-modal TRICS survey would be taking place at each development, to provide a baseline context of residential and visitor trip generation and mode split, the survey specifications needed to be significantly adapted to provide all of the additional Servicing and Delivery data, including the requirement of recording Dwell Times of all such activity. All surveys would commence at 0600 and conclude at 2200on a typical weekday (Monday to Friday).

2.9. Each TRICS survey specification would also need to include additional instructions to collect the additional data on Servicing and Deliveries. At each development, a dedicated enumerator would be responsible for undertaking the Servicing and Delivery observations and for breaking them down into Servicing Vehicle and Servicing Activity types, along with recording Dwell Times for each act of servicing undertaken. Separate count forms were created for this purpose.

2.10. All three surveys were successfully undertaken without any issues or incidents on typical weekdays in October 2024.

2.11. We understood from the outset that a wealth of Technical Analysis opportunities would be provided, with the combinations of the Servicing Vehicle and Servicing Activity types allowing for 42 separate sets of data to become available to work with. Add to this the collection of Dwell Time data across all Servicing Vehicle and Servicing Activity Types, and the potential for presenting a wide variety of results was clear. Therefore, a robust and comprehensive set of Technical Analyses were designed and undertaken. Each individual development was separately studied, with an additional comparative analysis then presenting the data from the three developments together.

2.12. The sets of results for each development are extensive. For a quicker study of summary information combining the three developments, we advise readers go to the sub-section of comparative analyses, whilst the results for the individual developments provide a greater level of detail as individual "case studies". For convenience, the analyses are broken down into the following sub-sections per development.

- Analysis 1.4: Standard Trip Rate Calculations, Mode Splits & Rank Order Positions
- Analysis 2/4: Servicing & Delivery Trips by Vehicle & Activity Types
- Analysis 3/4: Servicing & Delivery Dwell Times
- Analysis 4/4: Contextual Calculations & Servicing & Delivery Peaks

2.13. TRICS does not intend to provide any explanations, suggestions or reasoning behind the results that have been obtained through this Research Project's Technical Analysis. Therefore, any speculative conclusions to be drawn from the results presented in this report will be down to the professional judgement of practitioners, and none will be the opinion of TRICS Consortium Limited. However, TRICS can provide some technical observations that might assist practitioners in this process.

2.14. The wealth of data on Servicing and Delivery trips within this study allows for countless observations. Add to this the recording of Dwell Times for every individual act of servicing taking place at each of the three developments, and there is an almost endless list of observations that can be made. The technical observations provided in this report cover some selected highlights that we hope will be a good starting point for studying this reports' data further.

2.15. Readers are reminded that two of the developments (Canaletto Tower and Porter's Edge) fall within the 03/C (Flats Privately Owned) TRICS land use sub-category, whilst Bowl Court falls within the 03/M (Mixed Private/Affordable Housing) land use sub-category due to its split between privately owned and non-privately owned dwellings. Although the report does not make any direct comparisons between the land use sub-categories due to the fact that Bowl Court is a sample of one, readers are encouraged to study the data provided should they wish to make their own comparisons.

2.16. It is also important to note that the survey sample was just three developments, with surveys being undertaken on a single day at each. Although this study has provided a wealth of information and detail, which we hope will be helpful for practitioners when assessing future similar developments, all results should be received and interpreted in this context.

3. Introduction & Acknowledgements

3.1. The question of what are the levels of Servicing and Delivery trips at developments of residential apartments has been asked a number of times by various members of the TRICS Community. Up until now, attempts to answer this important question have been more speculative than evidence based, with there being a lack of focused and robust data specifically designed to address this issue. This Research Project tackles this question through the application of enhanced multi-modal TRICS surveys with an additional and comprehensive focus on all types of Servicing and Delivery, including Dwell Times, at three residential apartment developments in London.

3.2. It was February 2023 when the idea of a Research Project looking at this important topic was first introduced. Through continued communication with a number of contacts, we were able to formally commence the study in May 2024, with the enhanced surveys taking place on single weekdays in October 2024. More than two years after the very first communications, we are pleased to conclude this Research Project with the publication of this report. We consider this study a fine example of how members of the TRICS Community can contribute and work together in a number of ways to ensure that Research Projects can be established, developed and delivered.

3.3. Initially, the concept of this study was more focused on "home deliveries". During the Covid-19 pandemic of 2020/21, home deliveries became a subject of high importance and much discussion, and this is something that has continued through to the present day. It is widely accepted that the phenomenon of home deliveries has significantly grown in recent years, both in terms of its scale and the increasing need for the Transport Planning industry to understand its nature and its generation and variety of trips. This Research Project provides an evidence base from which to delve into this subject further, with the data obtained allowing for a wide variety of analyses and comparisons to be presented, significantly furthering practitioners' understanding of this important area. The study also expands home deliveries into wider categories of Servicing and Delivery activity, as we recognise that there is much more to study in this area.

3.4. There have been anecdotal suggestions that the physical occupancy of some newer apartment developments in London might not be as high as their "technical occupancy", meaning that some apartments, although technically occupied in terms of being owned, might be subject to periods when no physical occupancy is taking place. Therefore, it was important in this study to include comparisons of Total Vehicle and Total People trip generation with other developments within the TRICS land use sub-categories that the developments surveyed fell under, by calculating TRICS Rank Order Lists showing relative trip generation per 1 Dwelling and the position of each development within these lists. Although the survey sample of three developments is low, this part of the Technical Analysis would assist in starting to look at the question of true levels of occupancy and provide some helpful context in this area.

3.5. For the enhanced surveys necessary to take place to capture all Servicing and Delivery activity, with this required to be observable so that it could be broken down by both Servicing Vehicle and Servicing Activity type, it was important to establish an inclusion criteria which meant that the results would be robust with a high level of confidence. This is detailed in Section 4 of this report, but to identify a sufficient sample of residential apartment developments meeting this criteria it was necessary to undertake site visits at many more developments, to establish a shortlist from which to obtain survey permissions from management organisations.

3.6. The original intention was to identify three residential apartment developments that fell within the TRICS land use sub-category 03/C (Flats Privately Owned), so that the resulting data could be subject to averages being calculated. However, for one development it was subsequently discovered that a proportion of the dwellings that were not privately owned was sufficient enough to mean that the development would fall under the sub-category 03/M (Mixed Private/Affordable Housing). Although this meant that averaging across the three developments would not be possible, it also meant that we could use the fact that one of the sites had a significant proportion of non-privately owned dwellings to provide the Technical Analysis with added context, meaning that the study included a non-privately

owned element which could increase its value. It is hoped that readers of this report will find that the results can also assist with understanding Servicing and Deliveries at developments with more of a private/non-private dwelling split, although we do appreciate that the survey sample is low in this respect and so apply a caveat accordingly.

3.7. Although this study essentially consists of three "case studies" at separate residential apartment developments in Central and Inner London, with the survey results presented together for comparative purposes, TRICS considers that the wealth of data that has been obtained, covering all types of Servicing and Deliveries, constitutes a good source of information, reference and guidance, when considering Servicing and Delivery trips for developments in other parts of the UK and Ireland.

3.8. This was the first TRICS Research Project which included a "Sponsor and Review" element, whereby an external organisation (or organisations) participate from the outset by providing their technical expertise through a study's planning and analysis stages, also providing comments on the final report. This new approach has allowed this Research Project to be part-funded, and is something that TRICS will continue take forward, hopefully to assist the funding and delivery of future and similarly valuable studies. Benefits of participating in TRICS Research Projects in a Sponsor and Review role are as follows:

- Upon commencement of a TRICS Research Project, it will be announced that the Project will be undertaken in association with the Sponsor and Review organisation(s), through emails to all TRICS contacts, on the TRICS website, and via the TRICS LinkedIn and X pages (as well as any other social media channels we may be using).

- A specific page on the TRICS website will remain active throughout a Research Project and following its completion and the issuing of the final report. Sponsor and Review organisations will be invited to supply a company logo and a link to their websites, plus a paragraph of information, so that they can be fully recognised as a participant on this page.

- Final Research Reports will include the logo of Sponsor and Review organisations on its cover page, with studies being recognised as being undertaken in association with these organisations. Within reports will be an acknowledgments section which will also include the names and organisations of participants.

- The findings of Research Projects will be presented at the subsequent TRICS User Meeting, during which the Sponsor and Review organisations' participation will again be emphasised. In addition, participating organisations will be offered a free sponsor's place at this event, whereby they can display their organisation's promotional pop-up stand and meet many members of the TRICS Community, at what is always a popular gathering where a range of topics associated with the greater TRICS project are discussed.

- Final Research Reports will be freely available for download by all members of the TRICS Community. The availability of these reports will be heavily advertised. There are over 350 TRICS user organisations across the UK and Ireland, plus further users of our Bureau Service, so many organisations will be aware of our Research Projects from their commencement and will also be aware which organisations are participating in them.

3.9. It is important that some acknowledgements are made, as there have been multiple contributions from the very early stages of the idea of this study through to its commission and the project work being undertaken.

- Stantec were involved from the commencement of this study in a Sponsor and Review role. This is a new approach for TRICS that we hope to continue in future Research Projects *(see 3.8),* whereby studies are part-funded through the sponsorship element and valuable technical input is provided throughout the research's various stages. This approach has worked successfully in this first

instance with Stantec, and we would like to thank Tim Hapgood and his colleagues for their valuable contributions and expertise.

- Upon the commissioning of this study, it was managed and delivered by TRICS Project Manager Owen Edwards, undertaking the management of his first Research Project in this role. Harry Cook of TRICS also contributed through the undertaking of site visits and the Technical Analysis which followed the provision of the survey data.

- The surveys were undertaken by MHTC, one of our long-standing TRICS-approved data collection contractors, who delivered all survey data including their additional bespoke Servicing and Delivery elements to our specification.

- We would like to thank Joely Hill and Danny Calver of Transport for London for their input and ideas prior to this study being commissioned, which assisted the study's formation and structure.

- A special thanks also goes to Mark Cottray of WSP, who assisted in the earliest stages of the idea of this study with some valuable ideas and insight. Although he was not directly involved during the Research Project itself, Mark's early input played a significant part in establishing the early principles of this study, which are reflected in the work that has been undertaken.

- Finally, we thank the management organisations of the three residential apartment developments included in this study for providing permission for the surveys to take place.

4. Definitions

4.1. It is important to provide the definitions of the TRICS land use sub-categories, the Servicing Vehicle types and the Servicing Activity types, the latter being specifically designed for this Research Project.

4.2. Two of the developments surveyed for this study fall within the TRICS land use sub-category 03/C (Flats Privately Owned), whilst the third falls under the sub-category 03/M (Mixed Private/Affordable Housing). The definitions of both sub-categories are as follows.

- 03/C (Flats Privately Owned) – Use Class C3: *Housing developments where at least 75% of units are privately owned. Of the total number of units, 75% must also be houses (sum of "non-split" terraced, detached, semi-detached, bungalows, etc), with no more than 25% of the total units being flats. The TRICS definition of a privately owned dwelling is a dwelling at which residents have any degree of equity, or a dwelling that is owned by a private landlord and rented at market rates. Trip rates are calculated by Site Area, Dwellings, Housing Density, or Total Bedrooms.*

- 03/M (Mixed Private/Affordable Housing – Use Class C3): *Housing developments where less than 75% of units are privately owned, and less than 75% of units are non-privately owned. "Non-privately owned" may be council rented or housing association rented. The TRICS definition of a privately owned dwelling is a dwelling at which residents have any degree of equity, or a dwelling that is owned by a private landlord and rented at market rates. Trip rates are calculated by Site Area, Dwellings, Housing Density, or Total Bedrooms.*

4.3. It was recognised from the outset that Servicing and Deliveries at each development were likely to be undertaken by a variety of vehicle types. At the time the study took place, TRICS had a long-established Servicing Vehicles count, which is an extract of the total count recorded during a TRICS survey where acts of Servicing can be identified with a high level of confidence. It is important for TRICS users to realise the distinction of the Servicing Vehicles count being an extract of the total count rather than it being separate from it. For example, you might have 10 Light Goods Vehicles (LGVs) inbound during a TRICS survey, but only 6 of these might be undertaking acts of Servicing. Although all 10 LGVs would be shown in the standard LGVs count, the Servicing Vehicles count would just show the 6 vehicles that were Servicing the development being surveyed. A full explanation of how the Servicing Vehicles count relates to the rest of a survey is provided via a pop-up note which TRICS users can access when they view any survey where a Servicing Vehicles count has been included, as shown in *Figure 1*.

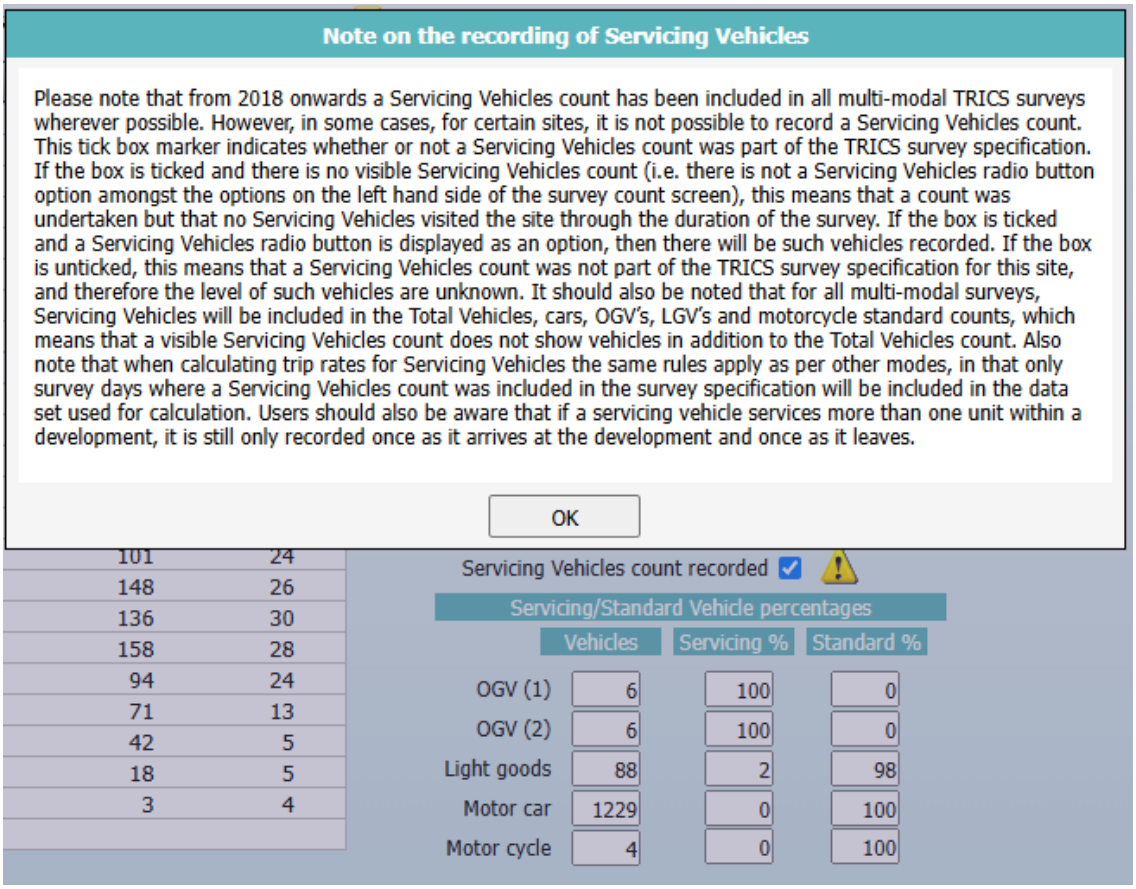


Figure 1: Note on the recording of Servicing Vehicles in TRICS

4.4. The TRICS Servicing Vehicles count is broken down into OGV(1), OGV(2), LGVs, Cars and Motorcycles. It should be noted that it does not include Pedal Cycles or any other mode of transport. For this Research Project, it was important to also include Pedal Cycles as a Servicing Vehicle type, and at an early stage in the study it had been identified that Cargo Bikes would also need to be included, so that the Servicing and Delivery trips at the three developments being surveyed would be fully comprehensive. Although a Cargo Bikes count type does not exist within the TRICS database, this type was accommodated specifically for this project. Therefore, the definitions of each Servicing Vehicle type are as follows.

- OGV(1): *All commercial vehicles with 2 axles and twin rear wheels and all vehicles with 3 axles, as a percentage of all vehicles included in the count shown.*

- OGV(2): *All goods vehicles with 4 or more axles, as a percentage of all vehicles included in the count shown.*

- LGV: *Consists of all goods vehicles up to 30 CWT unladen weight, as a percentage of all vehicles included in the count shown. Included in this category are car-type delivery vans, and standard "Transit" type vans, but not vehicles with twin rear wheels. Also includes ambulances (excluding patient passenger transports which would fall under Public Service Vehicle). Separate LGV counts were introduced in March 2013.*

- Car: *All cars including estates and light vans with side windows to the rear of the drivers' seat, as a percentage of all vehicles included in the count shown. In all survey data added following the release of 2006(b) in July 2006, Motor Cars exclude Taxis. For nearly all surveys within 2006(b),*

taxi vehicles were included within the Motor Cars category. Separate car counts were introduced in March 2013.

- Motorcycle: *Includes mopeds, motor scooters, motorcycles, and motorcycle combinations, as a percentage of all vehicles included in the count shown. Separate motorcycle counts were introduced in March 2013.*

- Pedal Cycle: *All manual and electric pedal cycles, including tricycles.*

- Cargo Bike: *An adapted pedal cycle with two or more wheels (manual or electric) which is designed to carry a significant amount of goods (or passengers) separately from the rider. Includes standard or adapted cycles with trailers attached.*

4.5. TRICS survey specifications, the documents which provide instruction as to how a multi-modal survey is to be undertaken at specific individual developments, include the following text which defines Servicing Vehicles in an overall "umbrella" context: *Examples of servicing vehicles include delivery vehicles, refuse and recycling lorries, utility company vehicles, couriers, fast food deliveries, building and repairs vehicles, plumbers and maintenance vehicles, etc."*

4.6. For this Research Project we needed to go further, and create Servicing Activity sub-categories. This was important to achieve the study's objective of a comprehensive analysis of Servicing and Deliveries that allowed for a wide variety of analyses to be undertaken. Therefore, this breakdown of Servicing Activity types is defined as follows.

- Utility: *Utility works, to include all types of non-delivery activity except waste and recycling (e.g., electricians, plumbers, builders, Sky TV, removal companies, etc).*

- Fast Food: *Fast food deliveries (noting that some companies such as Deliveroo, Just Eat and Uber Eats may also deliver groceries, in which case such activity would fall under the Supermarket & Groceries category).*

- Supermarkets & Groceries: *Deliveries of groceries from main supermarkets, discount food stores (e.g., Iceland, etc) and other grocery delivery services (e.g., Amazon in conjunction with main supermarkets), plus deliveries of smaller groceries (through apps such as Deliveroo, Uber Eats, etc), and separate deliveries of bulk food and drink items.*

- Courier & Mail: *Royal Mail deliveries, professional courier companies, and other non-food general delivery services (e.g., Amazon, Evri, etc).*

- Homeware: *Deliveries of bulky household items (e.g., furniture, fridges, ovens, cupboards, carpets, etc).*

- Waste & Recycling: *Large waste collection and recycling vehicles, scrap metal collections, scheduled large item collections, etc.*

5. Survey Sample & Method of Analysis

5.1. *Identifying and Selecting Developments*

5.1.1. Upon the commencement of this study, it was decided that three developments would be surveyed. The search for suitable developments was based on a criteria which was designed to provide sites which could be fully observable and not overly complex, whilst being of significant scale to provide robustness of results. It was highly important that candidate developments met this criteria so to ensure that the surveys could be undertaken with minimum risk and yielding high levels of accuracy. The inclusion criteria was as follows.

(i) Developments must be located within Central London (Inner London developments could also be considered).

(ii) Developments must be fully constructed and fully occupied.

(iii) Developments should be of a significant scale to provide robust data (at least 100 dwellings was preferred).

(iv) As a full multi-modal survey forms part of the study, developments should not have an excessive number of access points.

(v) Developments should be solely residential (i.e., they should fall within the 03/C (Flats Privately Owned) TRICS land use sub-category). If a development includes commercial (or other) elements, all trips associated with these elements, including all Servicing and Deliveries, would need to be identified and excluded.

(vi) The layout of the developments must be such so that all acts of Servicing, split by the standard Servicing Vehicle types (and Pedal Cycles/Cargo Bikes) can be identified through direct observation.

(vii) All sub-types of Servicing activity also need to be identified through observation.

(viii) Ideally, all Servicing activity should be observable at a small number of locations (preferably just one).

(ix) Dwell times for every act of Servicing, split between Servicing Vehicle type and Servicing Activity type, must also be identifiable through observation. A dwell time is defined as the time between the vehicle arriving at a development as a whole and the vehicle departing it. Note that we can only record the arrival and departure trips at the site as a whole and will be unable to go further into the number of dwellings being Serviced by each vehicle that arrives and departs a development.

(x) Ideally, developments should be surveyed in full. If there are multiple blocks at a development, we could consider covering a proportion of the blocks, so long as the Servicing and Delivery activity for just the portion of the development being surveyed could be correctly identified.

5.1.2. It is important to note item (ix) in the criteria list in *5.1.1*. All Servicing and Delivery trips recorded would need to be arrivals at and departures from the developments as a whole. It would not have been possible to go further in this study and examine multiple acts of Servicing internally within developments (e.g., a delivery driver visiting three different apartments at a development to drop off parcels). Such detail could not take place through observational surveys using the TRICS multi-modal methodology, and would require more of a questionnaire-based approach directed at residents. However, household questionnaire are renowned for yielding very small response returns. Therefore, the focus of this study was to provide solid evidence of Servicing and Delivery trips on the network,

which we consider is the most appropriate and useful approach for practitioners in the Transport Planning industry.

5.1.3. Following site visits being undertaken, developments being shortlisted, survey specifications being written up and survey permissions being obtained from development management organisations, the final selection of developments to be surveyed for this study was as follows. *Figure 2* shows the locations of the developments.

- Canaletto Tower, City Road, Islington, London EC1V 1AD
- Porter's Edge, Maritime Street, Surrey Quays, London SE16 7FW
- Bowl Court, Plough Yard, Shoreditch, London EC2A 3BH

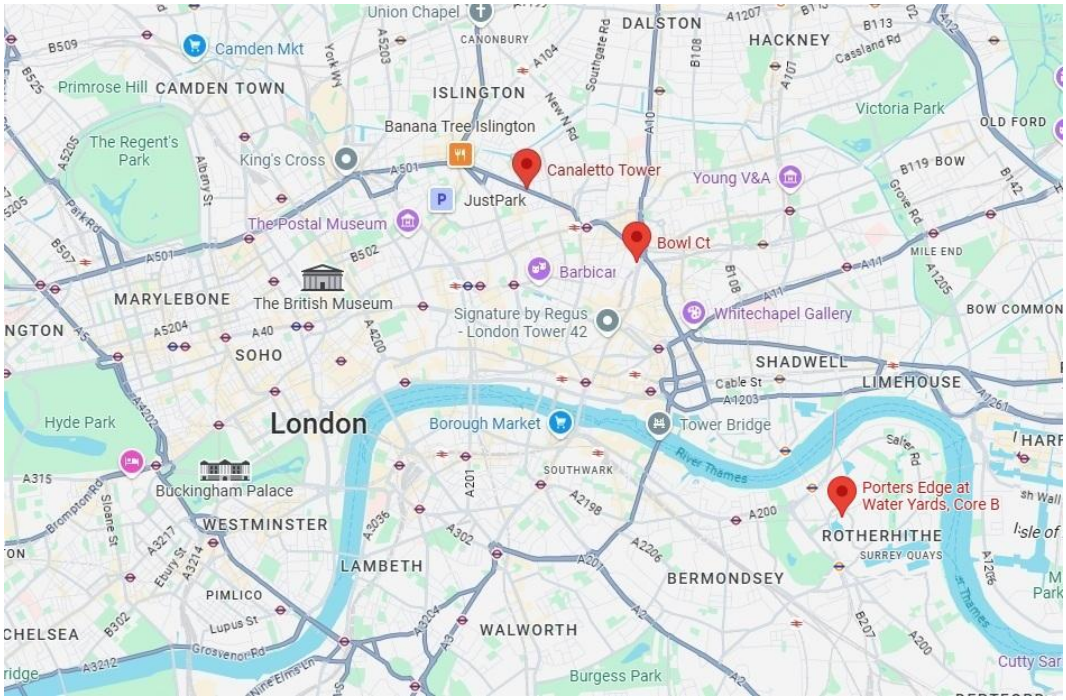


Figure 2: Location of Selected Developments

5.1.4. Canaletto Tower is located in Islington. It is just off the A501, which heads north-west towards Angel and the junction with the northbound A1 and south-east via Old Street towards Shoreditch High Street and the junction with the northbound/southbound A10. The nearest rail station is Old Street, which includes both mainline rail and the London Underground. Local bus stops are positioned nearby on either side of the A501. The development is in a built-up area, with Regent's Canal situated to the north, accessed by the waterways of City Road Basin and Wenlock Basin, both of which are very close to the site (to the north-west and north-east respectively). There is charged on-site parking at this development, with 88 spaces present. In terms of Servicing and Delivery facilities, this development has an on-site concierge inside of the only pedestrian access for all Servicing and Delivery trips. Any Servicing and Delivery vehicles would have to park on Wharf Road, although this has double yellow lines or permit parking rules between 0830 and 1830 on weekdays.

5.1.5. Porter's Edge is located in Surrey Quays. To the west of the Isle of Dogs, it is within an area of docklands, with the development just to the north of the dock of Canada Water. Surrey Quays Road forms a large semi-loop around the site to the east, north and west, and the nearest rail station is Canada Water to the west, which includes London Overground rail and the London Underground. Local bus stops are present on both sides of Surrey Quays Road. An area indirectly to the east of the site was undergoing redevelopment and construction at the time of the surveys taking place. There is no on-site parking available at this development. In terms of Servicing and Delivery facilities, this

development has an on-site concierge at one access for all deliveries, according to signage around the development. However, there are several front door accesses to individual dwellings that could also receive deliveries. There is also an internal Servicing area off Surrey Quays Road for waste collection.

5.1.6. Bowl Court is located in Shoreditch. It is very close to the junction of the northbound/southbound A10 and the A1202 Great Eastern Street/Commercial Street (which heads north-west and south-east). The site is in a busy and built-up area. The nearest rail station is Shoreditch High Street, which is served by the London Overground. Other rail options include Liverpool Street to the south (Overground, mainline rail and the Elizabeth Line) and Old Street to the north-west (mainline rail and London Underground). Bus stops are present on both the A10 and the A1202. There is no on-site parking available at this development. In terms of Servicing and Delivery facilities, this development has no on-site concierge, but there are internal lobbies for each of the two blocks, which include post boxes for each apartment. There is also a bin storage area located adjacent to one of the site access doors. Any Servicing and Delivery vehicles have to park on Plough Yard, where there's a loading only bay for two vehicles or one large LGV or an OGV. The rest of Plough Yard has double yellow lines.

5.1.7. A comparative summary of key data for the three developments is provided in *Table 1*.

Key Development Data	**Development**		
	Canaletto Tower	**Porter's Edge**	**Bowl Court**
TRICS Main Location Type	Edge of Town Centre	Neighbourhood Centre	Edge of Town Centre
TRICS Sub-Location Type	Development Zone	Development Zone	Built-Up Zone
Opening Year	2016	2018	2019
Site Area (hectares)	0.21	0.67	0.11
Housing Density	1,461.54	349.25	509.09
Occupied Dwellings (Privately Owned)	190	234	39
Occupied Dwellings (Non-Privately Owned)	0	0	17
Total Occupied Dwellings	190	234	56
Total Bedrooms	307	440	113
Average Bedrooms per Dwelling	1.6	1.9	2.0
On-Site Parking Spaces	88	0	0
Buses/trams within 400m (M-F 0700-1900) *	946	1,056	1,536
Trains within 1km (M-F 0700-1900) *	1,266	964	3,334
Pop. (500m Radius - exc. Development)	14,642	9,500	6,400
Car Ownership per Hhold (5 mile radius)	<= 0.5	<=0.5	<=0.5
PTAL Rating	5	6(a)	6(b)
** See the Public Transport Provision Summary Table note in TRICS for method of calculation.*			

Table 1: Comparative Summary of Key Development Data

5.1.8. The full TRICS data record for each development will become available to TRICS users in Version 8.25.9 of the database, which will go live in September 2025. The site reference codes are as follows.

- Canaletto Tower (IS-03-C-09)
- Porter's Edge (SK-03-C-04)
- Bowl Court (HK-03-M-01)

5.2. *Survey Method*

5.2.1. To collect all of the data necessary for this study, it was necessary to adapt the standard multi-modal TRICS data collection methodology. Although a full and standard multi-modal TRICS survey would be taking place at each development, to provide a baseline context of residential and visitor trip generation and mode split, the survey specifications needed to be significantly adapted to provide all of the additional Servicing and Delivery data, including the requirement of recording Dwell Times of all such activity.

5.2.2. All surveys would commence at 0600 and conclude at 2200 on a typical weekday (Monday to Friday), with the standard multi-modal survey covering all access points to record 100% of all inbound and outbound vehicular and non-vehicular trips generated by each development. Interviews of pedestrians to ascertain their main method of each trip undertaken would be factored up to 100% using a series of head counts, which is standard practice in the multi-modal TRICS data collection methodology. All motor vehicles were split by the 7 standard TRICS classifications (these being cars, taxis, motorcycles, LGVs, OGV(1), OGV(2) and PSVs). These surveys would also include the standard Servicing Vehicles count, which would assist the process of validation testing of the additional Servicing and Deliveries data.

5.2.3. Each survey specification would also need to include additional instructions to collect the additional data on Servicing and Deliveries. At each development, a dedicated enumerator would be responsible for undertaking the Servicing and Delivery observations and for breaking them down into Servicing Vehicle and Servicing Activity types, along with recording Dwell Times for each act of servicing undertaken. An example extract of text used in the specifications for this purpose is shown in *Figure 3*.

Servicing Vehicles & Servicing Activity Breakdowns (with Dwell Times)	All servicing vehicles by type (also including pedal cycles and cargo bikes), split between inbound and outbound trips, are also required to be broken down by the following servicing activity types: • Utility • Food & Drink • Supermarket • Courier & Mail • Homeware • Waste & Recycling For each individual act of servicing identified, the arrival time and the departure time (to and from the site as a whole) must also be recorded, specifying the vehicle type and the servicing activity type in each case. ***NOTE: A separate set of count forms are being supplied for the purposes of collecting this additional count data.***
Special Conditions	It is important that this enumerator is focused solely on all servicing and delivery activity and is not involved in undertaking any of the standard multi-modal counts and interviews.

Figure 3: Additional Survey Specification Instructions for Servicing Vehicles, Servicing Activities & Dwell Times

5.2.4. For the purposes of recording all of the necessary additional Servicing and Deliveries data, a separate data collection form was produced. 100% of all Servicing and Delivery activity was required to be obtained through direct observation, split by the various Servicing Vehicle and Servicing Activity sub-categories. This was essential for the Technical Analysis that would take place following the supply and validation testing of the survey data. It is also important to note that every individual act of servicing was required to be recorded with arrival and departure times to accurately obtain the Dwell Time information. An example of the automatically calculated Total Servicing & Delivery Vehicle Counts template is shown in *Figure 4*. This template was designed to combine the Servicing and Delivery counts from each of the Servicing Activity types. Note that the forms are split by inbound and outbound count periods encompassing the 0600 to 2200 survey durations.

TOTAL SERVICING VEHICLE COUNTS

THIS COUNT SHOULD CONSIST OF ALL SERVICING VEHICLES VISITING THE SITE

INBOUND JOURNEYS

TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
0600-0630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0630-0700	0		0		0		0		0		0		0		0	
0700-0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0730-0800	0		0		0		0		0		0		0		0	
0800-0830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830-0900	0		0		0		0		0		0		0		0	
0900-0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0930-1000	0		0		0		0		0		0		0		0	
1000-1030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030-1100	0		0		0		0		0		0		0		0	
1100-1130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1130-1200	0		0		0		0		0		0		0		0	
1200-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230-1300	0		0		0		0		0		0		0		0	
1300-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1330-1400	0		0		0		0		0		0		0		0	
1400-1430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1430-1500	0		0		0		0		0		0		0		0	
1500-1530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1530-1600	0		0		0		0		0		0		0		0	
1600-1630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1630-1700	0		0		0		0		0		0		0		0	
1700-1730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1730-1800	0		0		0		0		0		0		0		0	
1800-1830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830-1900	0		0		0		0		0		0		0		0	
1900-1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-2000	0		0		0		0		0		0		0		0	
2000-2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2030-2100	0		0		0		0		0		0		0		0	
2100-2130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2130-2200	0		0		0		0		0		0		0		0	
TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

OUTBOUND JOURNEYS

TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
0600-0630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0630-0700	0		0		0		0		0		0		0		0	
0700-0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0730-0800	0		0		0		0		0		0		0		0	
0800-0830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830-0900	0		0		0		0		0		0		0		0	
0900-0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0930-1000	0		0		0		0		0		0		0		0	
1000-1030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030-1100	0		0		0		0		0		0		0		0	
1100-1130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1130-1200	0		0		0		0		0		0		0		0	
1200-1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230-1300	0		0		0		0		0		0		0		0	
1300-1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1330-1400	0		0		0		0		0		0		0		0	
1400-1430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1430-1500	0		0		0		0		0		0		0		0	
1500-1530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1530-1600	0		0		0		0		0		0		0		0	
1600-1630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1630-1700	0		0		0		0		0		0		0		0	
1700-1730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1730-1800	0		0		0		0		0		0		0		0	
1800-1830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830-1900	0		0		0		0		0		0		0		0	
1900-1930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1930-2000	0		0		0		0		0		0		0		0	
2000-2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2030-2100	0		0		0		0		0		0		0		0	
2100-2130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2130-2200	0		0		0		0		0		0		0		0	
TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 4: Automatically Calculated Total Servicing & Delivery Counts Template

5.2.5. An example of one of the six Servicing Activity type count forms (for the Utility category) is shown in *Figure 5*.

UTILITY SERVICING VEHICLE COUNTS

THIS COUNT SHOULD CONSIST OF ALL UTILITY SERVICING VEHICLES VISITING THE SITE

INBOUND JOURNEYS

TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
0600-0630		0		0		0		0		0		0		0	0	0
0630-0700															0	
0700-0730		0		0		0		0		0		0		0	0	0
0730-0800															0	
0800-0830		0		0		0		0		0		0		0	0	0
0830-0900															0	
0900-0930		0		0		0		0		0		0		0	0	0
0930-1000															0	
1000-1030		0		0		0		0		0		0		0	0	0
1030-1100															0	
1100-1130		0		0		0		0		0		0		0	0	0
1130-1200															0	
1200-1230		0		0		0		0		0		0		0	0	0
1230-1300															0	
1300-1330		0		0		0		0		0		0		0	0	0
1330-1400															0	
1400-1430		0		0		0		0		0		0		0	0	0
1430-1500															0	
1500-1530		0		0		0		0		0		0		0	0	0
1530-1600															0	
1600-1630		0		0		0		0		0		0		0	0	0
1630-1700															0	
1700-1730		0		0		0		0		0		0		0	0	0
1730-1800															0	
1800-1830		0		0		0		0		0		0		0	0	0
1830-1900															0	
1900-1930		0		0		0		0		0		0		0	0	0
1930-2000															0	
2000-2030		0		0		0		0		0		0		0	0	0
2030-2100															0	
2100-2130		0		0		0		0		0		0		0	0	0
2130-2200															0	
TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

OUTBOUND JOURNEYS

TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
0600-0630		0		0		0		0		0		0		0	0	0
0630-0700															0	
0700-0730		0		0		0		0		0		0		0	0	0
0730-0800															0	
0800-0830		0		0		0		0		0		0		0	0	0
0830-0900															0	
0900-0930		0		0		0		0		0		0		0	0	0
0930-1000															0	
1000-1030		0		0		0		0		0		0		0	0	0
1030-1100															0	
1100-1130		0		0		0		0		0		0		0	0	0
1130-1200															0	
1200-1230		0		0		0		0		0		0		0	0	0
1230-1300															0	
1300-1330		0		0		0		0		0		0		0	0	0
1330-1400															0	
1400-1430		0		0		0		0		0		0		0	0	0
1430-1500															0	
1500-1530		0		0		0		0		0		0		0	0	0
1530-1600															0	
1600-1630		0		0		0		0		0		0		0	0	0
1630-1700															0	
1700-1730		0		0		0		0		0		0		0	0	0
1730-1800															0	
1800-1830		0		0		0		0		0		0		0	0	0
1830-1900															0	
1900-1930		0		0		0		0		0		0		0	0	0
1930-2000															0	
2000-2030		0		0		0		0		0		0		0	0	0
2030-2100															0	
2100-2130		0		0		0		0		0		0		0	0	0
2130-2200															0	
TIME	CARS		LGV		M/C		OGV(1)		OGV(2)		P/C		CARGO BIKES		TOTAL	
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 5: Example of a Servicing Activity Type Count Form (Utility)

5.2.6. The template for the Servicing Vehicle Dwell Duration count form is shown in *Figure 6*. Every act of servicing would be recorded, showing the vehicle's arrival and departure times, the Servicing Vehicle type and the Servicing Activity type, with the Dwell Time duration automatically calculated.

SERVICING VEHICLE DWELL DURATION

THIS SHOULD CONSIST OF DWELL DURATIONS FOR ALL SERVICING VEHICLES VISITING THE SITE

ARRIVAL TIME	DEPARTURE TIME	SERVICING VEHICLE TYPE	SERVICING ACTIVITY TYPE	DURATION (MINUTES)

SERVICING VEHICLE TYPE	SERVICING ACTIVITY TYPE
CAR	UTILITY
LGV	FAST FOOD
M/C	SUPERMARKET & GROCERIES
OGV(1)	COURIER & MAIL
OGV(2)	HOMEWARE
P/C	WASTE & RECYCLING
CARGO BIKE	

Figure 6: Servicing Vehicle Dwell Time Count Form Template

5.2.7. All three surveys were successfully undertaken without any issues or incidents on typical weekdays in October 2024. The survey data for each development was then forwarded to the TRICS team for data input and thorough validation testing, with each set of data meeting all requirements and being certified as TRICS-Compliant.

5.3. *Method of Technical Analysis*

5.3.1. When the 7 Servicing Vehicle types are further broken down by the 6 Servicing Activity types, we understood from the outset that a wealth of Technical Analysis opportunities would be provided, with 42 separate sets of data becoming available to work with. Add to this the collection of Dwell Time data across all Servicing Vehicle and Servicing Activity Types, and the potential for presenting a wide variety of results was clear. A robust and comprehensive set of analyses was put together in a list, which was discussed with Stantec in their Sponsor and Review role, with a final set of analyses agreed upon. Therefore, the method of Technical Analysis is presented as the following list.

Site by Site Analysis

1) Standard TRICS multi-modal trip rate calculations for each development, with separate calculations for Total Vehicles and Total People. All calculations to be undertaken per 1 Dwelling. This forms a baseline of context for the remainder of the analysis.

2) Total survey (inbound plus outbound and all time period) mode splits for each development.

3) A comparison of Total Vehicle and Total People trip generation for each development with other developments within the TRICS land use sub-categories of 03/C (Flats Privately Owned) and 03/M (Mixed Private/Affordable Housing). Extracts of rank order list comparisons to be provided. This analysis is to be provided as it has been brought up that some units at residential apartments in London might be physically under occupied *(see 3.4)*, so this was designed to assist in providing some helpful context regarding the true levels of physical occupation on the day of each survey.

4) Summary tables (separately for each development) of Servicing and Delivery trips by Servicing Vehicle types.

5) Summary tables (separately for each development) of Servicing and Delivery trips by Servicing Activity types.

6) Tables (separately for each development) of all inbound and outbound Servicing and Delivery trips by Servicing Activity types (with all Servicing Vehicle Types combined), further broken down into hourly survey periods (from 0600 until 2200), including average Dwell Times.

7) Tables for each development showing each Servicing Vehicle type and their average Dwell Times throughout the survey day, separated into inbound and outbound trips.

8) Tables for each development showing each Servicing Activity type and their average Dwell Times throughout the survey day, separated into inbound and outbound trips.

9) A table of Dwell Times, split into various minute ranges and for specific period throughout the day, and which is also split by Servicing Vehicle types.

10) A table of Dwell Times, split into various minute ranges and for specific periods throughout the day, and which is also split by Servicing Activity types.

11) Tables for each development showing each Servicing Activity type, split by Servicing Vehicle types, and then further split by arrival time periods throughout the day or Dwell Times, as percentages of total Servicing and Delivery trips. Peak trip periods to be highlighted for combinations of Servicing Activity types and Servicing Vehicle types (e.g., Fast Food Deliveries by Motorcycles in the evening period of 1600-2200). This information is provided in *Appendix A*.

12) For each development, the number of inbound plus outbound Servicing and Delivery trips per 1 Dwelling.

13) For each development, the number of inbound plus outbound Servicing and Delivery trips as a percentage of each vehicle type's total trips (meaning the trips generated by each development as a whole, including residents, visitors, etc).

14) Three pie charts for each development, showing Servicing Vehicle type percentages, Servicing Activity type percentages, and Dwell Time range percentages.

15) Two tables and two bar charts for each development, split by arrival periods throughout the day, one showing Servicing Vehicle types and the other showing Servicing Activity types, to illustrate peak periods of Servicing & Delivery trips.

Comparative Analysis

16) Comparison tables bringing together the above information for the separate developments into a straightforward summary format, providing easily understood side by side comparisons to avoid complexity.

17) Four tables comparing each development's total Servicing and Delivery trips, trips by Servicing Vehicle types, trips by Servicing Activity types, and Dwell Times.

18) Overall comparison tables showing Servicing Activity types, further split by Servicing Vehicle types with average Dwell Times shown for each.

6. Results & Outputs

6.1. *Results Introduction*

6.1.1. The results of the Technical Analysis are presented in this section of the report. Firstly, the series of analyses for each separate development are provided, so to present individual "case studies". This is then followed by a comparative analysis that combines sets of results from each of the developments in a straightforward way.

6.1.2. The sets of results for each development are extensive, but are considered important and unique enough in each instance to be included in the main body of this report instead of Appendix A. For a quicker study of summary information combining the three developments, we advise readers go to the sub-section of comparative analyses, whilst the results for the individual developments provide a greater level of detail as individual "case studies". For convenience, they are broken down into the following sub-sections per development.

- Analysis 1/4: Standard Trip Rate Calculations, Mode Splits & Rank Order Positions
- Analysis 2/4: Servicing & Delivery Trips by Vehicle & Activity Types
- Analysis 3/4: Servicing & Delivery Dwell Times
- Analysis 4/4: Contextual Calculations & Servicing & Delivery Peaks

6.2. *Results for Canaletto Tower*

Analysis 1/4: Standard Trip Rate Calculations, Mode Splits & Rank Order Positions

6.2.1. The standard multi-modal trip rate calculations for Canaletto Tower, by Total Vehicles and Total People *(Technical Analysis item 1 in 5.3.1)*, are provided in *Tables 2 and 3*.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED (CANALETTO TOWER) Calculation Factor: 1 DWELLS Count Type: TOTAL VEHICLES									
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	1	190	0.011	1	190	0.011	1	190	0.022
07:00-08:00	1	190	0.026	1	190	0.026	1	190	0.052
08:00-09:00	1	190	0.042	1	190	0.047	1	190	0.089
09:00-10:00	1	190	0.058	1	190	0.058	1	190	0.116
10:00-11:00	1	190	0.047	1	190	0.047	1	190	0.094
11:00-12:00	1	190	0.037	1	190	0.042	1	190	0.079
12:00-13:00	1	190	0.047	1	190	0.042	1	190	0.089
13:00-14:00	1	190	0.021	1	190	0.032	1	190	0.053
14:00-15:00	1	190	0.026	1	190	0.021	1	190	0.047
15:00-16:00	1	190	0.032	1	190	0.026	1	190	0.058
16:00-17:00	1	190	0.026	1	190	0.021	1	190	0.047
17:00-18:00	1	190	0.032	1	190	0.042	1	190	0.074
18:00-19:00	1	190	0.021	1	190	0.026	1	190	0.047
19:00-20:00	1	190	0.047	1	190	0.042	1	190	0.089
20:00-21:00	1	190	0.042	1	190	0.042	1	190	0.084
21:00-22:00	1	190	0.011	1	190	0.016	1	190	0.027
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			0.526			0.541			1.067

Table 2: Standard TRICS Total Vehicles Trip Rates per Dwelling (Canaletto Tower)

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED (CANALETTO TOWER) Calculation Factor: 1 DWELLS Count Type: TOTAL PEOPLE									
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	1	190	0.011	1	190	0.032	1	190	0.043
07:00-08:00	1	190	0.058	1	190	0.132	1	190	0.190
08:00-09:00	1	190	0.053	1	190	0.284	1	190	0.337
09:00-10:00	1	190	0.100	1	190	0.332	1	190	0.432
10:00-11:00	1	190	0.121	1	190	0.189	1	190	0.310
11:00-12:00	1	190	0.084	1	190	0.158	1	190	0.242
12:00-13:00	1	190	0.179	1	190	0.158	1	190	0.337
13:00-14:00	1	190	0.100	1	190	0.126	1	190	0.226
14:00-15:00	1	190	0.153	1	190	0.132	1	190	0.285
15:00-16:00	1	190	0.153	1	190	0.105	1	190	0.258
16:00-17:00	1	190	0.184	1	190	0.100	1	190	0.284
17:00-18:00	1	190	0.163	1	190	0.111	1	190	0.274
18:00-19:00	1	190	0.232	1	190	0.153	1	190	0.385
19:00-20:00	1	190	0.232	1	190	0.116	1	190	0.348
20:00-21:00	1	190	0.279	1	190	0.132	1	190	0.411
21:00-22:00	1	190	0.163	1	190	0.047	1	190	0.210
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.265			2.307			4.572

Table 3: Standard TRICS Total People Trip Rates per Dwelling (Canaletto Tower)

6.2.2. The mode split for Canaletto Tower *(Technical Analysis item 2 in 5.3.1)*, covering the 0600-2200 survey duration with all inbound and outbound trips combined, is provided in *Figure 7*.

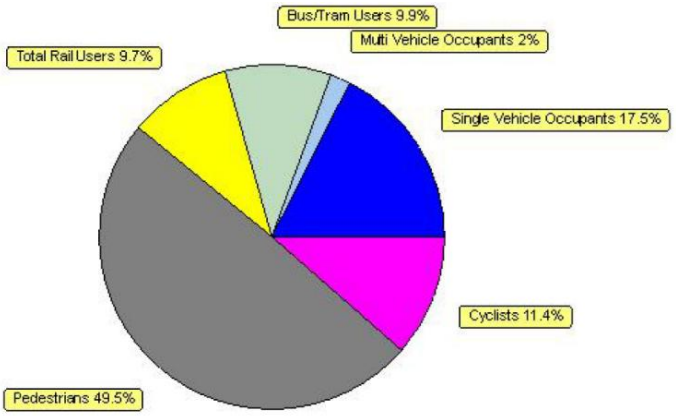


Figure 7: Mode Split 0600-2200 Inbound + Outbound (Canaletto Tower)

6.2.3. The TRICS Rank Order List comparison extracts *(Technical Analysis item 3 in 5.3.1)* for Canaletto Tower (separately for trip generation by Total Vehicles and by Total People) are provided in *Tables 4 and 5*. Note that these are just extracts as the Rank Order Lists would otherwise be very long. Canaletto Tower is highlighted in bold. The information provided indicates the total number of surveys in the Rank Order Lists for context.

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED - CANALETTO TOWER - TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 25
15th Percentile = no. 133
Total Number of Surveys = 157

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
129	NG-03-C-03	BLOCK OF FLATS	NOTTINGHAM	46	Monday	02/10/2023	0.500	0.630	1.130	0.700
130	NG-03-C-02	HOUSES (SPLIT INTO FLATS)	NOTTINGHAM	135	Wednesday	09/11/2016	0.548	0.570	1.118	0.730
131	IS-03-C-06	BLOCK OF FLATS	HOLLOWAY	14	Monday	27/06/2016	0.500	0.571	1.071	
132	HO-03-C-02	BLOCK OF FLATS	BRENTFORD	86	Wednesday	03/09/2014	0.477	0.488	0.965	0.740
133	BM-03-C-01	BLOCKS OF FLATS	BROMLEY	160	Monday	12/11/2018	0.387	0.488	0.875	0.520
134	**IS-03-C-09**	**BLOCK OF FLATS**	**ISLINGTON**	**190**	**Tuesday**	**22/10/2024**	**0.416**	**0.432**	**0.848**	**0.460**
135	GM-03-C-03	BLOCK OF FLATS	MANCHESTER	20	Friday	14/10/2011	0.400	0.400	0.800	0.700
136	IS-03-C-03	BLOCK OF FLATS	ISLINGTON	9	Thursday	21/11/2013	0.333	0.444	0.777	0.890
137	DY-03-C-03	BLOCKS OF FLATS	DERBY	30	Wednesday	25/09/2019	0.400	0.367	0.767	0.530
138	HM-03-C-02	BLOCKS OF FLATS	HAMMERSMITH	194	Tuesday	30/04/2019	0.397	0.361	0.758	0.270
139	TH-03-C-04	BLOCK OF FLATS	POPLAR	83	Friday	21/06/2019	0.337	0.386	0.723	0.300

Table 4: Total Vehicles Rank Order List (Position of Canaletto Tower)

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED - CANALETTO TOWER - TOTAL PEOPLE
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 22
15th Percentile = no. 122
Total Number of Surveys = 143

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
116	KD-03-C-01	BLOCK OF FLATS	KILDARE	32	Friday	22/05/2009	1.563	2.188	3.750	1.090
117	HG-03-C-01	BLOCKS OF FLATS	TOTTENHAM HALE	255	Tuesday	18/06/2019	1.561	2.157	3.718	0.430
118	HF-03-C-03	BLOCK OF FLATS	BOREHAMWOOD	91	Thursday	14/11/2019	1.824	1.802	3.626	0.660
119	SF-03-C-05	BLOCKS OF FLATS	IPSWICH	69	Wednesday	23/06/2021	1.710	1.913	3.623	1.100
120	BT-03-C-02	BLOCKS OF FLATS	WEMBLEY	472	Wednesday	30/11/2016	1.602	2.008	3.610	0.320
121	**IS-03-C-09**	**BLOCK OF FLATS**	**ISLINGTON**	**190**	**Tuesday**	**22/10/2024**	**1.579**	**1.979**	**3.558**	**0.460**
122	HK-03-C-02	BLOCK OF FLATS	SHOREDITCH	9	Tuesday	11/11/2008	1.667	1.889	3.556	
123	RI-03-C-01	FLATS	HULL	20	Tuesday	13/05/2014	1.750	1.800	3.550	1.100
124	KN-03-C-03	BLOCK OF FLATS	KENSINGTON	72	Friday	11/05/2012	1.722	1.819	3.541	0.830
125	TH-03-C-01	BLOCK OF FLATS	ALDGATE	32	Sunday	09/11/2008	1.719	1.781	3.500	0.780
126	IS-03-C-05	BLOCK OF FLATS	FINSBURY	15	Wednesday	29/06/2016	1.467	2.000	3.467	

Table 5: Total People Rank Order List (Position of Canaletto Tower)

Analysis 2/4: Servicing & Delivery Trips by Vehicle & Activity Types

6.2.4. Summaries of Servicing and Delivery trips by Servicing Vehicle types and Servicing Activity types *(Technical Analysis items 4 and 5 in 5.3.1)* are provided in *Tables 6 and 7*, with corresponding pie charts *(Technical Analysis item 14 in 5.3.1)* provided in *Figures 8 and 9*.

CANALETTO TOWER 03/C SERVICING VEHICLE TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
CARS	4	4	8	5.6%
LGV	23	23	46	31.9%
M/C	14	14	28	19.4%
OGV(1)	1	1	2	1.4%
OGV(2)	0	0	0	0.0%
P/C	28	28	56	38.9%
CARGO BIKES	2	2	4	2.8%
TOTAL	72	72	144	

Table 6: Summary of Trips by Servicing Vehicle Types (Canaletto Tower)

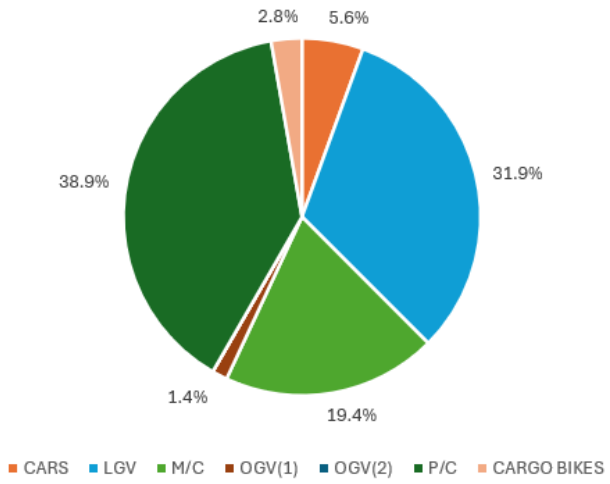


Figure 8: Servicing Vehicle Types Percentage Split (Canaletto Tower)

CANALETTO TOWER 03/C SERVICING ACTIVITY TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
UTILITY	4	4	8	5.6%
FAST FOOD	38	38	76	52.8%
SUPERMARKET & GROCERIES	11	11	22	15.3%
COURIER & MAIL	16	16	32	22.2%
HOMEWARE	2	2	4	2.8%
WASTE & RECYCLING	1	1	2	1.4%
TOTAL	72	72	144	

Table 7: Summary of Trips by Servicing Activity Types (Canaletto Tower)

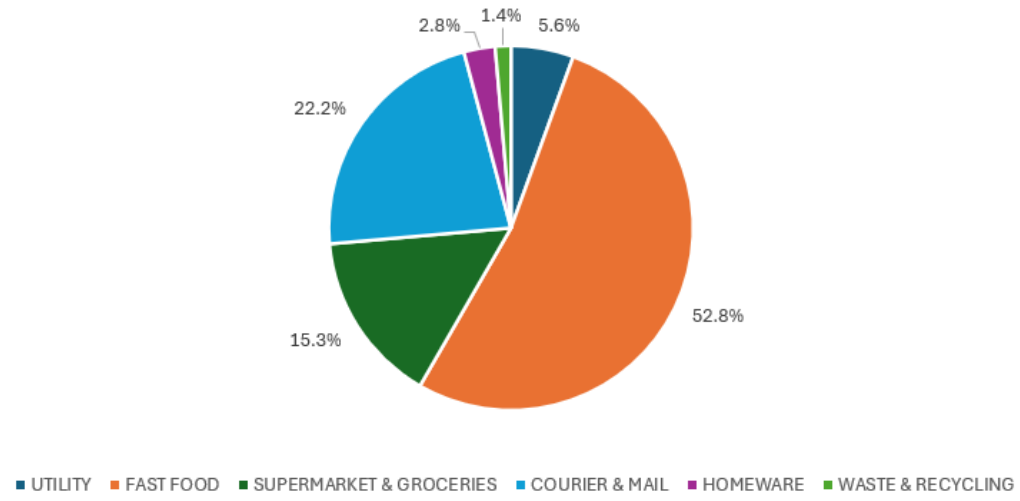


Figure 9: Servicing Activity Types Percentage Split (Canaletto Tower)

6.2.5. A table of all inbound and outbound Servicing and Delivery trips, broken down by Servicing Activity types (with all Servicing Vehicle Types combined), which is further broken down into hourly survey periods from 0600 until 2200 *(Technical Analysis item 6 in 5.3.1)*, is provided in *Table 8*. This table includes average Dwell Times for each Servicing Activity type.

CANALETTO TOWER 03/C SERVICING ACTIVITY TYPES PER HOUR														
INBOUND							OUTBOUND							TOTAL
TIME PERIOD	TOTAL TRIPS						TIME PERIOD	TOTAL TRIPS						
	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING		UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	
06:00-07:00	0	0	0	0	0	0	06:00-07:00	0	0	0	0	0	0	0
07:00-08:00	0	0	0	1	0	0	07:00-08:00	0	0	0	1	0	0	2
08:00-09:00	0	0	2	2	0	0	08:00-09:00	0	0	2	2	0	0	8
09:00-10:00	2	1	0	2	0	1	09:00-10:00	1	1	0	2	0	1	11
10:00-11:00	0	0	1	2	0	0	10:00-11:00	0	0	1	2	0	0	6
11:00-12:00	0	1	0	6	0	0	11:00-12:00	1	1	0	5	0	0	14
12:00-13:00	0	1	2	3	1	0	12:00-13:00	0	1	2	4	1	0	15
13:00-14:00	0	5	0	0	1	0	13:00-14:00	0	3	0	0	1	0	10
14:00-15:00	0	1	1	0	0	0	14:00-15:00	0	3	1	0	0	0	6
15:00-16:00	0	1	1	0	0	0	15:00-16:00	0	1	1	0	0	0	4
16:00-17:00	2	1	0	0	0	0	16:00-17:00	1	1	0	0	0	0	5
17:00-18:00	0	5	1	0	0	0	17:00-18:00	1	4	1	0	0	0	12
18:00-19:00	0	5	1	0	0	0	18:00-19:00	0	6	1	0	0	0	13
19:00-20:00	0	7	0	0	0	0	19:00-20:00	0	7	0	0	0	0	14
20:00-21:00	0	7	1	0	0	0	20:00-21:00	0	5	1	0	0	0	14
21:00-22:00	0	3	1	0	0	0	21:00-22:00	0	5	1	0	0	0	10
TOTAL	4	38	11	16	2	1	TOTAL	4	38	11	16	2	1	144
AVERAGE DWELL TIME (MINUTES)	36	4	4	2	8	13	AVERAGE DWELL TIME (MINUTES)	36	4	4	2	8	13	

Table 8: Hourly Servicing & Delivery Trips by Servicing Activity Types (Canaletto Tower)

6.2.6. A table showing each Servicing Vehicle type and their average Dwell Times throughout the survey day, separated into inbound and outbound trips, is provided in *Table 9*, with a similar table showing each Servicing Activity type provided in *Table 10 (Technical Analysis items 7 and 8 in 5.3.1)*.

CANALETTO TOWER 03/C SERVICING VEHICLE TYPES AVERAGE DWELL TIMES			
SERVICING VEHICLE TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
CARS	4	4	2
LGV	23	23	9
M/C	14	14	3
OGV(1)	1	1	13
OGV(2)	0	0	N/A
P/C	28	28	4
CARGO BIKES	2	2	1
TOTAL	72	72	32

Table 9: Servicing Vehicle Types Trips with Average Dwell Times (Canaletto Tower)

CANALETTO TOWER 03/C SERVICING ACTIVITY TYPES AVERAGE DWELL TIMES			
SERVICING ACTIVITY TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
UTILITY	4	4	36
FAST FOOD	38	38	4
SUPERMARKET & GROCERIES	11	11	4
COURIER & MAIL	16	16	2
HOMEWARE	2	2	8
WASTE & RECYCLING	1	1	13
TOTAL	72	72	67

Table 10: Servicing Activity Types Trips with Average Dwell Times (Canaletto Tower)

Analysis 3/4: Servicing & Delivery Dwell Times

6.2.7. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Vehicle types *(Technical Analysis item 9 in 5.3.1)*, is provided in *Table 11*.

CANALETTO TOWER 03/C SERVICING VEHICLE TYPES DWELL TIMES PER ARRIVAL TIME PERIOD						
SERVICING VEHICLE TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
CARS	0 to 2	2	0	0	0	2
	3 to 5	0	1	0	0	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
LGV	0 to 2	2	6	2	0	10
	3 to 5	4	4	1	0	9
	6 to 30	0	1	1	1	3
	31 or more	1	0	0	0	1
M/C	0 to 2	0	2	2	1	5
	3 to 5	0	2	2	6	10
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
OGV(1)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	1	0	0	0	1
	31 or more	0	0	0	0	0
OGV(2)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
P/C	0 to 2	0	0	2	0	2
	3 to 5	1	5	3	15	24
	6 to 30	0	0	0	2	2
	31 or more	0	0	0	0	0
CARGO BIKES	0 to 2	0	2	0	0	2
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
TOTAL		11	23	13	25	

Table 11: Servicing Vehicle Types Dwell Times by Minute Ranges and Arrival Periods (Canaletto Tower)

6.2.8. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Activity types *(Technical Analysis item 10 in 5.3.1),* is provided in *Table 12*.

CANALETTO TOWER 03/C SERVICING ACTIVITY TYPES DWELL TIMES PER ARRIVAL TIME PERIOD						
SERVICING ACTIVITY TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
UTILITY	0 to 2	0	0	0	0	0
	3 to 5	1	0	1	0	2
	6 to 30	0	0	1	0	1
	31 or more	1	0	0	0	1
FAST FOOD	0 to 2	0	2	4	1	7
	3 to 5	1	5	4	19	29
	6 to 30	0	0	0	2	2
	31 or more	0	0	0	0	0
SUPERMARKET & GROCERIES	0 to 2	0	1	2	0	3
	3 to 5	2	2	1	2	7
	6 to 30	0	0	0	1	1
	31 or more	0	0	0	0	0
COURIER & MAIL	0 to 2	4	8	0	0	12
	3 to 5	1	3	0	0	4
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
HOMEWARE	0 to 2	0	0	0	0	0
	3 to 5	0	1	0	0	1
	6 to 30	0	1	0	0	1
	31 or more	0	0	0	0	0
WASTE & RECYCLING	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	1	0	0	0	1
	31 or more	0	0	0	0	0
TOTAL		11	23	13	25	

Table 12: Servicing Activity Types Dwell Times by Minute Ranges and Arrival Periods (Canaletto Tower)

6.2.9. A pie chart showing the split between Dwell Time minute ranges for all Servicing and Delivery trips *(Technical Analysis item 14 in 5.3.1)*, is provided in *Figure 10*.

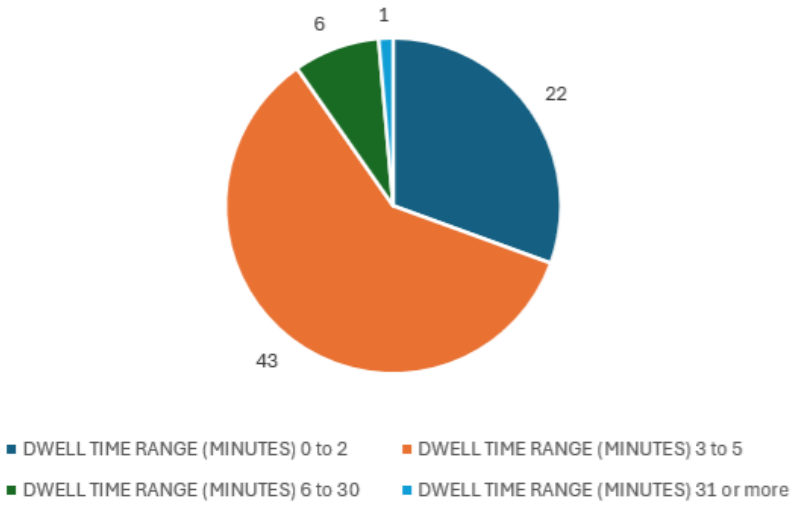


Figure 10: Dwell Time Minute Range Splits for Servicing & Delivery Trips (Canaletto Tower)

Analysis 4/4: Contextual Calculations & Servicing & Delivery Peaks

6.2.10. The number of Servicing and Delivery trips (inbound plus outbound) per 1 Dwelling *(Technical Analysis item 12 in 5.3.1)* is provided in *Table 13*.

Number of Dwellings	Number of Servicing Trips	Number of Servicing Trips per Dwelling
190	144	0.76

Table 13: Servicing & Delivery Trips (Inbound + Outbound) per 1 Dwelling (Canaletto Tower)

6.2.11. The number of inbound plus outbound Servicing and Delivery trips as a percentage of each vehicle type's total trips (meaning the trips generated by each development as a whole, including residents, visitors, etc) *(Technical Analysis item 13 in 5.3.1)*, is provided in *Table 14*.

Vehicle Type	Total Trips	Servicing Trips	Servicing Trips as a % of Total Trips
CAR	34	8	23.5%
LGV	53	46	86.8%
M/C	28	28	100.0%
OGV(1)	2	2	100.0%
OGV(2)	0	0	N/A
P/C	99	56	56.6%
CARGO BIKE	4	4	100.0%

Table 14: Servicing & Delivery Trips (Inbound + Outbound) as a Percentage of Total Vehicle Trips (Canaletto Tower)

6.2.12. Tables and bar charts, each split by arrival periods throughout the day, one showing Servicing Vehicle types and the other showing Servicing Activity types, to illustrate peak periods of inbound Servicing & Delivery trips *(Technical Analysis item 15 in 5.3.1)*, are provided in *Tables 15 and 16* and *Figures 11 and 12*.

Servicing Vehicle Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
CAR	2	1	0	0
LGV	7	11	4	1
M/C	0	4	4	7
OGV(1)	1	0	0	0
OGV(2)	0	0	0	0
P/C	1	5	5	17
CARGO BIKE	0	2	0	0

Table 15: Trips by Servicing Vehicle Types by Arrival Periods (Canaletto Tower)

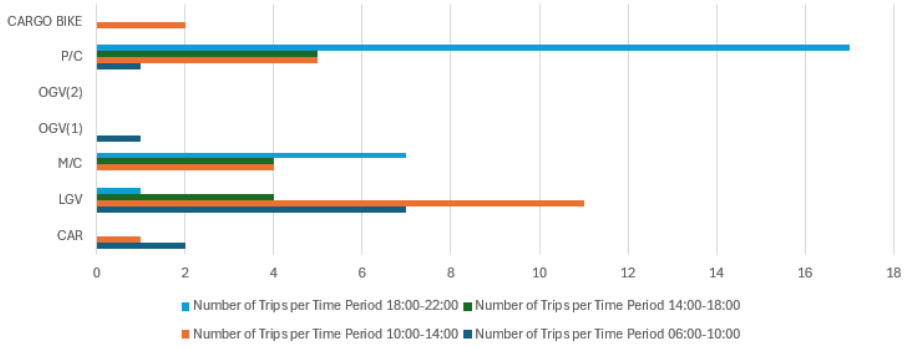


Figure 11: Indication of Peak Periods of Servicing Vehicle Types Trips (Canaletto Tower)

Servicing Activity Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	2	0	2	0
FAST FOOD	1	7	8	22
SUPERMARKET & GROCERIES	2	3	3	3
COURIER & MAIL	5	11	0	0
HOMEWARE	0	2	0	0
WASTE & RECYCLING	1	0	0	0

Table 16: Trips by Servicing Activity Types by Arrival Periods (Canaletto Tower)

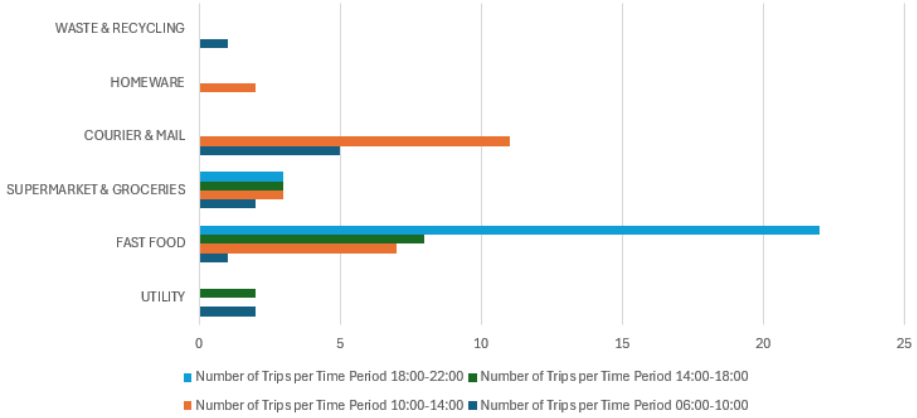


Figure 12: Indication of Peak Periods of Servicing Activity Types Trips (Canaletto Tower)

6.3. *Results for Porter's Edge*

Analysis 1/4: Standard Trip Rate Calculations, Mode Splits & Rank Order Positions

6.3.1. The standard multi-modal trip rate calculations for Porter's Edge, by Total Vehicles and Total People *(Technical Analysis item 1 in 5.3.1)*, are provided in *Tables 17 and 18*.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED (PORTERS EDGE) Calculation Factor: 1 DWELLS Count Type: TOTAL VEHICLES									
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	1	234	0.009	1	234	0.004	1	234	0.013
07:00-08:00	1	234	0.013	1	234	0.000	1	234	0.013
08:00-09:00	1	234	0.009	1	234	0.017	1	234	0.026
09:00-10:00	1	234	0.021	1	234	0.013	1	234	0.034
10:00-11:00	1	234	0.004	1	234	0.017	1	234	0.021
11:00-12:00	1	234	0.013	1	234	0.013	1	234	0.026
12:00-13:00	1	234	0.043	1	234	0.047	1	234	0.090
13:00-14:00	1	234	0.047	1	234	0.038	1	234	0.085
14:00-15:00	1	234	0.021	1	234	0.030	1	234	0.051
15:00-16:00	1	234	0.026	1	234	0.021	1	234	0.047
16:00-17:00	1	234	0.004	1	234	0.017	1	234	0.021
17:00-18:00	1	234	0.026	1	234	0.017	1	234	0.043
18:00-19:00	1	234	0.009	1	234	0.009	1	234	0.018
19:00-20:00	1	234	0.034	1	234	0.026	1	234	0.060
20:00-21:00	1	234	0.004	1	234	0.004	1	234	0.008
21:00-22:00	1	234	0.034	1	234	0.034	1	234	0.068
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			0.317			0.307			0.624

Table 17: Standard TRICS Total Vehicles Trip Rates per Dwelling (Porter's Edge)

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED (PORTERS EDGE) Calculation Factor: 1 DWELLS Count Type: TOTAL PEOPLE									
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	1	234	0.034	1	234	0.085	1	234	0.119
07:00-08:00	1	234	0.043	1	234	0.175	1	234	0.218
08:00-09:00	1	234	0.145	1	234	0.444	1	234	0.589
09:00-10:00	1	234	0.103	1	234	0.184	1	234	0.287
10:00-11:00	1	234	0.073	1	234	0.158	1	234	0.231
11:00-12:00	1	234	0.124	1	234	0.175	1	234	0.299
12:00-13:00	1	234	0.098	1	234	0.218	1	234	0.316
13:00-14:00	1	234	0.218	1	234	0.179	1	234	0.397
14:00-15:00	1	234	0.107	1	234	0.115	1	234	0.222
15:00-16:00	1	234	0.094	1	234	0.068	1	234	0.162
16:00-17:00	1	234	0.162	1	234	0.154	1	234	0.316
17:00-18:00	1	234	0.286	1	234	0.256	1	234	0.542
18:00-19:00	1	234	0.380	1	234	0.218	1	234	0.598
19:00-20:00	1	234	0.363	1	234	0.137	1	234	0.500
20:00-21:00	1	234	0.252	1	234	0.073	1	234	0.325
21:00-22:00	1	234	0.205	1	234	0.051	1	234	0.256
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.687			2.690			5.377

Table 18: Standard TRICS Total People Trip Rates per Dwelling (Porter's Edge)

6.3.2. The mode split for Porter's Edge *(Technical Analysis item 2 in 5.3.1),* covering the 0600-2200 survey duration with all inbound and outbound trips combined, is provided in *Figure 13*.

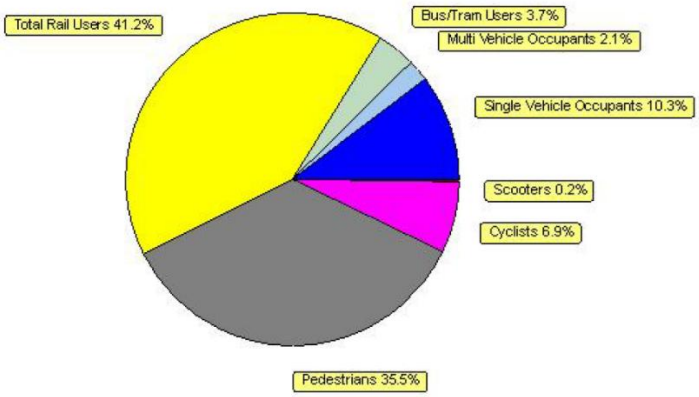


Figure 13: Mode Split 0600-2200 Inbound + Outbound (Porter's Edge)

6.3.3. The TRICS Rank Order List comparison extracts *(Technical Analysis item 3 in 5.3.1)* for Porter's Edge (separately for trip generation by Total Vehicles and by Total People) are provided in *Tables 19 and 20*. Note that these are just extracts as the Rank Order Lists would otherwise be very long. Porter's Edge is highlighted in bold. The information provided indicates the total number of surveys in the Rank Order Lists for context.

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED - PORTERS EDGE - TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 25
15th Percentile = no. 133
Total Number of Surveys = 157

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
142	HK-03-C-01	BLOCK OF FLATS	SHOREDITCH	17	Saturday	15/11/2008	0.294	0.294	0.588	
143	WF-03-C-01	BLOCKS OF FLATS	WALTHAMSTOW	97	Tuesday	05/11/2019	0.268	0.309	0.577	0.29
144	IS-03-C-01	FLATS	ISLINGTON	31	Tuesday	04/11/2008	0.290	0.258	0.548	0.29
145	KN-03-C-01	BLOCKS OF FLATS	NOTTING HILL	16	Thursday	15/10/2009	0.188	0.313	0.500	1.13
146	HM-03-C-01	BLOCK OF FLATS	FULHAM	42	Wednesday	16/07/2014	0.238	0.238	0.476	0.90
147	**SK-03-C-04**	**BLOCKS OF FLATS**	**SURREY QUAYS**	**234**	**Wednesday**	**16/10/2024**	**0.235**	**0.239**	**0.474**	
148	DL-03-C-03	BLOCKS OF FLATS	DUBLIN	65	Tuesday	27/02/2007	0.185	0.262	0.447	0.51
149	WH-03-C-02	BLOCK OF FLATS	BATTERSEA	378	Monday	17/06/2024	0.209	0.222	0.431	0.11
150	BY-03-C-01	BLOCKS OF FLATS	BARNSLEY	112	Tuesday	08/09/2020	0.214	0.179	0.393	0.31
151	SK-03-C-02	BLOCK OF FLATS	BERMONDSEY	29	Thursday	23/04/2015	0.172	0.172	0.344	0.07
152	TH-03-C-01	BLOCK OF FLATS	ALDGATE	32	Sunday	09/11/2008	0.156	0.188	0.344	0.78

Table 19: Total Vehicles Rank Order List (Position of Porter's Edge)

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED - PORTERS EDGE - TOTAL PEOPLE
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 22
15th Percentile = no. 122
Total Number of Surveys = 143

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
97	LU-03-C-01	BLOCKS OF FLATS	DROGHEDA	52	Thursday	12/09/2013	2.096	2.250	4.346	1.23
98	DL-03-C-11	BLOCK OF FLATS	DUBLIN	96	Tuesday	10/09/2013	2.083	2.250	4.333	0.70
99	DL-03-C-18	BLOCKS OF FLATS	DUBLIN	102	Wednesday	19/05/2021	2.010	2.265	4.275	0.71
100	GA-03-C-01	FLATS	GALWAY	34	Thursday	31/10/2013	2.088	2.147	4.235	1.29
101	IS-03-C-06	BLOCK OF FLATS	HOLLOWAY	14	Monday	27/06/2016	1.571	2.643	4.214	
102	**SK-03-C-04**	**BLOCKS OF FLATS**	**SURREY QUAYS**	**234**	**Wednesday**	**16/10/2024**	**1.833**	**2.346**	**4.179**	
103	BT-03-C-01	BLOCKS OF FLATS	PARK ROYAL	170	Wednesday	28/09/2016	1.824	2.347	4.171	1.25
104	HO-03-C-02	BLOCK OF FLATS	BRENTFORD	86	Wednesday	03/09/2014	2.012	2.140	4.152	0.74
105	PB-03-C-02	BLOCK OF FLATS	PETERBOROUGH	44	Tuesday	18/10/2011	2.182	1.955	4.137	1.00
106	WF-03-C-06	BLOCKS OF FLATS	WANSTEAD	44	Tuesday	25/05/2021	2.000	2.136	4.136	1.23
107	WH-03-C-02	BLOCK OF FLATS	BATTERSEA	378	Monday	17/06/2024	2.037	2.069	4.106	0.11

Table 20: Total People Rank Order List (Position of Porter's Edge)

Analysis 2/4: Servicing & Delivery Trips by Vehicle & Activity Types

6.3.4. Summaries of Servicing and Delivery trips by Servicing Vehicle types and Servicing Activity types *(Technical Analysis items 4 and 5 in 5.3.1)* are provided in *Tables 21 and 22*, with corresponding pie charts *(Technical Analysis item 14 in 5.3.1)* provided in *Figures 14 and 15*.

PORTER'S EDGE 03/C SERVICING VEHICLE TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
CARS	5	5	10	7.0%
LGV	30	30	60	42.3%
M/C	22	22	44	31.0%
OGV(1)	0	0	0	0.0%
OGV(2)	0	0	0	0.0%
P/C	13	13	26	18.3%
CARGO BIKES	1	1	2	1.4%
TOTAL	71	71	142	

Table 21: Summary of Trips by Servicing Vehicle Types (Porter's Edge)

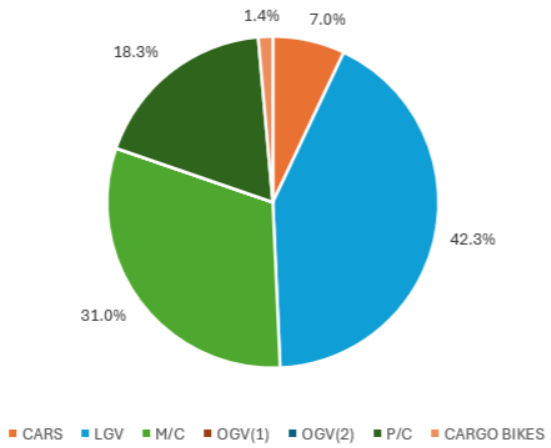


Figure 14: Servicing Vehicle Types Percentage Split (Porter's Edge)

PORTER'S EDGE 03/C SERVICING ACTIVITY TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
UTILITY	8	8	16	11.3%
FAST FOOD	34	34	68	47.9%
SUPERMARKET & GROCERIES	3	3	6	4.2%
COURIER & MAIL	25	25	50	35.2%
HOMEWARE	1	1	2	1.4%
WASTE & RECYCLING	0	0	0	0.0%
TOTAL	71	71	142	

Table 22: Summary of Trips by Servicing Activity Types (Porter's Edge)

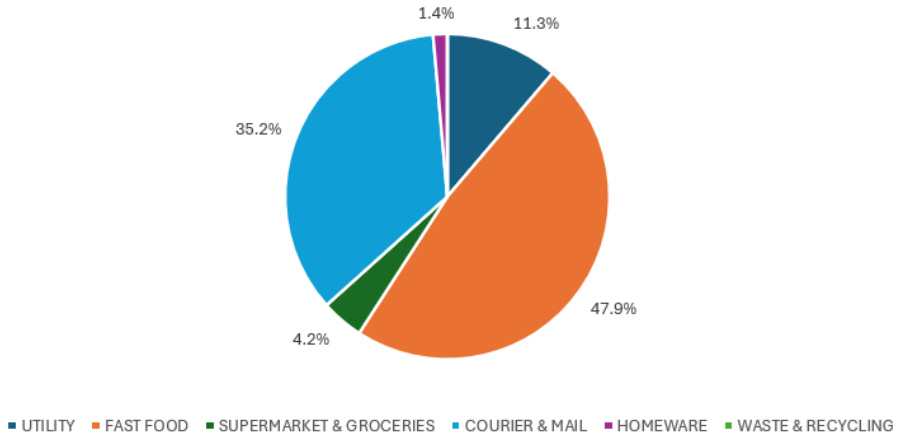


Figure 15: Servicing Activity Types Percentage Split (Porter's Edge)

6.3.5. A table of all inbound and outbound Servicing and Delivery trips, broken down by Servicing Activity types (with all Servicing Vehicle Types combined), which is further broken down into hourly survey periods from 0600 until 2200 *(Technical Analysis item 6 in 5.3.1)*, is provided in *Table 23*. This table includes average Dwell Times for each Servicing Activity type.

PORTER'S EDGE 03/C SERVICING ACTIVITY TYPES PER HOUR														
INBOUND							OUTBOUND							TOTAL
TIME PERIOD	TOTAL TRIPS						TIME PERIOD	TOTAL TRIPS						
	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING		UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	
06:00-07:00	0	0	0	0	0	0	06:00-07:00	0	0	0	0	0	0	0
07:00-08:00	3	0	0	0	0	0	07:00-08:00	0	0	0	0	0	0	3
08:00-09:00	1	0	0	0	0	0	08:00-09:00	1	0	0	0	0	0	2
09:00-10:00	1	0	1	1	0	0	09:00-10:00	0	0	1	1	0	0	5
10:00-11:00	0	1	0	1	0	0	10:00-11:00	1	1	0	1	0	0	5
11:00-12:00	1	0	0	0	0	0	11:00-12:00	0	0	0	0	0	0	1
12:00-13:00	0	1	0	8	0	0	12:00-13:00	1	1	0	8	0	0	19
13:00-14:00	1	5	0	8	0	0	13:00-14:00	0	5	0	7	0	0	26
14:00-15:00	1	1	0	2	0	0	14:00-15:00	2	1	0	3	0	0	10
15:00-16:00	0	2	1	2	1	0	15:00-16:00	0	2	1	2	0	0	11
16:00-17:00	0	1	0	1	0	0	16:00-17:00	3	1	0	0	1	0	7
17:00-18:00	0	1	0	2	0	0	17:00-18:00	0	1	0	3	0	0	7
18:00-19:00	0	5	0	0	0	0	18:00-19:00	0	5	0	0	0	0	10
19:00-20:00	0	6	1	0	0	0	19:00-20:00	0	6	1	0	0	0	14
20:00-21:00	0	4	0	0	0	0	20:00-21:00	0	4	0	0	0	0	8
21:00-22:00	0	7	0	0	0	0	21:00-22:00	0	7	0	0	0	0	14
TOTAL	8	34	3	25	1	0	TOTAL	8	34	3	25	1	0	142
AVERAGE DWELL TIME (MINUTES)	207	3	3	3	5	N/A	AVERAGE DWELL TIME (MINUTES)	207	3	3	3	5	N/A	

Table 23: Hourly Servicing & Delivery Trips by Servicing Activity Types (Porter's Edge)

6.3.6. A table showing each Servicing Vehicle type and their average Dwell Times throughout the survey day, separated into inbound and outbound trips, is provided in *Table 24*, with a similar table showing each Servicing Activity type provided in *Table 25 (Technical Analysis items 7 and 8 in 5.3.1)*.

PORTER'S EDGE 03/C SERVICING VEHICLE TYPES AVERAGE DWELL TIMES			
SERVICING VEHICLE TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
CARS	5	5	111
LGV	30	30	39
M/C	22	22	4
OGV(1)	0	0	N/A
OGV(2)	0	0	N/A
P/C	13	13	3
CARGO BIKES	1	1	4
TOTAL	71	71	161

Table 24: Servicing Vehicle Types Trips with Average Dwell Times (Porter's Edge)

PORTER'S EDGE 03/C SERVICING ACTIVITY TYPES AVERAGE DWELL TIMES			
SERVICING ACTIVITY TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
UTILITY	8	8	207
FAST FOOD	34	34	3
SUPERMARKET & GROCERIES	3	3	3
COURIER & MAIL	25	25	3
HOMEWARE	1	1	5
WASTE & RECYCLING	0	0	N/A
TOTAL	71	71	221

Table 25: Servicing Activity Types Trips with Average Dwell Times (Porter's Edge)

Analysis 3/4: Servicing & Delivery Dwell Times

6.3.7. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Vehicle types *(Technical Analysis item 9 in 5.3.1)*, is provided in *Table 26*.

PORTER'S EDGE 03/C SERVICING VEHICLE TYPES DWELL TIMES PER TIME PERIOD						
SERVICING VEHICLE TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
CARS	0 to 2	0	0	1	0	1
	3 to 5	0	0	1	0	1
	6 to 30	0	0	1	0	1
	31 or more	1	1	0	0	2
LGV	0 to 2	1	5	3	1	10
	3 to 5	2	8	1	0	11
	6 to 30	0	4	2	0	6
	31 or more	3	0	0	0	3
M/C	0 to 2	0	0	2	3	5
	3 to 5	0	2	2	11	15
	6 to 30	0	1	1	0	2
	31 or more	0	0	0	0	0
OGV(1)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
OGV(2)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
P/C	0 to 2	0	1	0	2	3
	3 to 5	0	4	1	5	10
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
CARGO BIKES	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	1	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
TOTAL		7	26	15	23	

Table 26: Servicing Vehicle Types Dwell Times by Minute Ranges and Arrival Periods (Porter's Edge)

6.3.8. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Activity types *(Technical Analysis item 10 in 5.3.1),* is provided in *Table 27*.

PORTER'S EDGE 03/C SERVICING ACTIVITY TYPES DWELL TIMES PER ARRIVAL TIME PERIOD						
SERVICING ACTIVITY TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
UTILITY	0 to 2	0	0	0	0	0
	3 to 5	1	0	0	0	1
	6 to 30	0	0	1	0	1
	31 or more	4	2	0	0	6
FAST FOOD	0 to 2	0	1	1	5	7
	3 to 5	0	6	3	17	26
	6 to 30	0	0	1	0	1
	31 or more	0	0	0	0	0
SUPERMARKET & GROCERIES	0 to 2	1	0	0	1	2
	3 to 5	0	0	0	0	0
	6 to 30	0	0	1	0	1
	31 or more	0	0	0	0	0
COURIER & MAIL	0 to 2	0	5	5	0	10
	3 to 5	1	8	1	0	10
	6 to 30	0	4	1	0	5
	31 or more	0	0	0	0	0
HOMEWARE	0 to 2	0	0	0	0	0
	3 to 5	0	0	1	0	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
WASTE & RECYCLING	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
TOTAL		7	26	15	23	

Table 27: Servicing Activity Types Dwell Times by Minute Ranges and Arrival Periods (Porter's Edge)

6.3.9. A pie chart showing the split between Dwell Time minute ranges for all Servicing and Delivery trips *(Technical Analysis item 14 in 5.3.1)*, is provided in *Figure 16*.

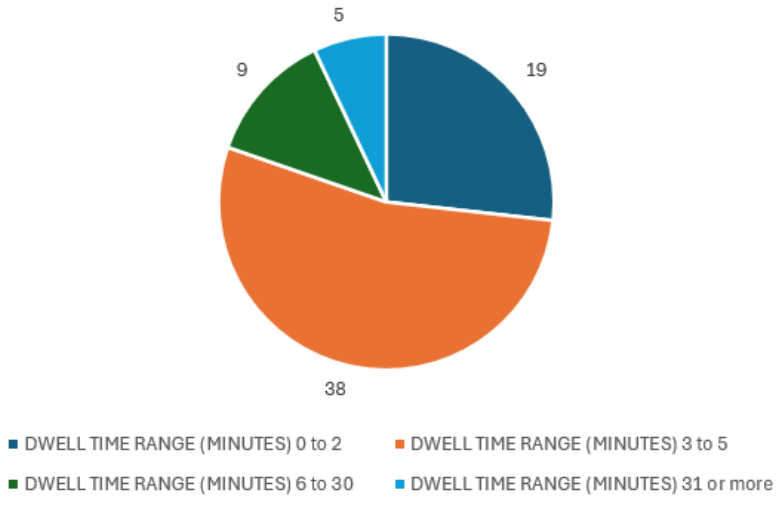


Figure 16: Dwell Time Minute Range Splits for Servicing & Delivery Trips (Porter's Edge)

Analysis 4/4: Contextual Calculations & Servicing & Delivery Peaks

6.3.10. The number of Servicing and Delivery trips (inbound plus outbound) per 1 Dwelling *(Technical Analysis item 12 in 5.3.1)* is provided in *Table 28*.

Number of Dwellings	Number of Servicing Trips	Number of Servicing Trips per Dwelling
234	142	0.61

Table 28: Servicing & Delivery Trips (Inbound + Outbound) per 1 Dwelling (Porter's Edge)

6.3.11. The number of inbound plus outbound Servicing and Delivery trips as a percentage of each vehicle type's total trips (meaning the trips generated by each development as a whole, including residents, visitors, etc) *(Technical Analysis item 13 in 5.3.1)*, is provided in *Table 29*.

Vehicle Type	Total Trips	Servicing Trips	Servicing Trips as a % of Total Trips
CAR	27	10	37.0%
LGV	62	60	96.8%
M/C	55	44	80.0%
OGV(1)	0	0	N/A
OGV(2)	0	0	N/A
P/C	68	26	38.2%
CARGO BIKE	2	2	100.0%

Table 29: Servicing & Delivery Trips (Inbound + Outbound) as a Percentage of Total Vehicle Trips (Porter's Edge)

6.3.12. Tables and bar charts, each split by arrival periods throughout the day, one showing Servicing Vehicle types and the other showing Servicing Activity types, to illustrate peak periods of inbound Servicing & Delivery trips *(Technical Analysis item 15 in 5.3.1)*, are provided in *Tables 30 and 31* and *Figures 17 and 18*.

Servicing Vehicle Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
CAR	1	1	3	0
LGV	6	17	6	1
M/C	0	3	5	14
OGV(1)	0	0	0	0
OGV(2)	0	0	0	0
P/C	0	5	1	7
CARGO BIKE	0	0	0	1

Table 30: Trips by Servicing Vehicle Types by Arrival Periods (Porter's Edge)

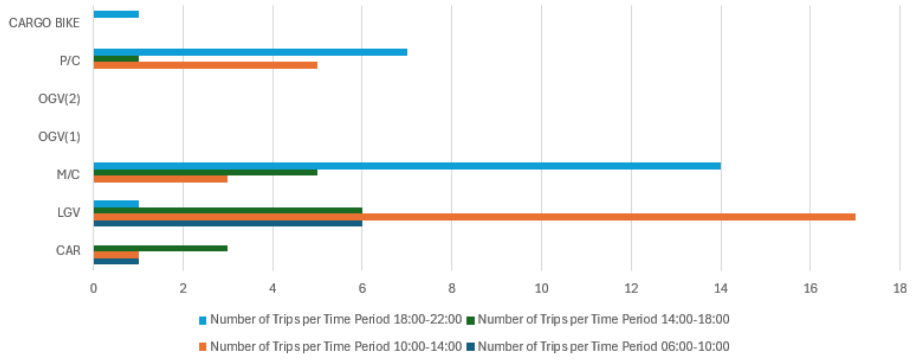


Figure 17: Indication of Peak Periods of Servicing Vehicle Types Trips (Porter's Edge)

Servicing Activity Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	5	2	1	0
FAST FOOD	0	7	5	22
SUPERMARKET & GROCERIES	1	0	1	1
COURIER & MAIL	1	17	7	0
HOMEWARE	0	0	1	0
WASTE & RECYCLING	0	0	0	0

Table 31: Trips by Servicing Activity Types by Arrival Periods (Porter's Edge)

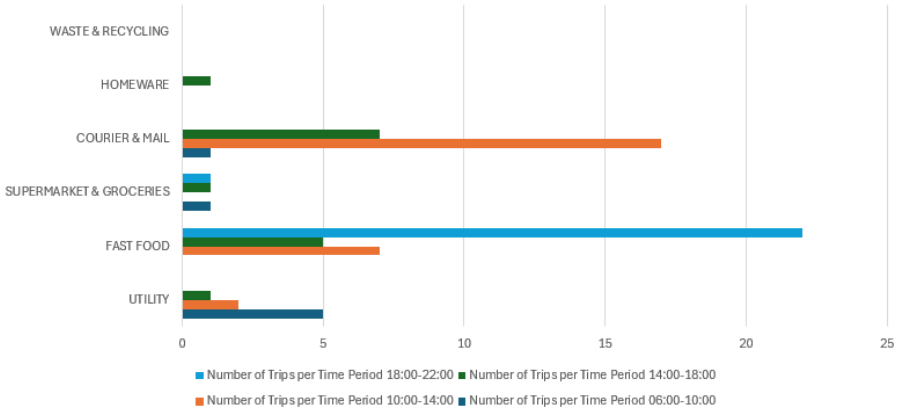


Figure 18: Indication of Peak Periods of Servicing Activity Types Trips (Porter's Edge)

6.4. *Results for Bowl Court*

Analysis 1/4: Standard Trip Rate Calculations, Mode Splits & Rank Order Positions

6.4.1. The standard multi-modal trip rate calculations for Bowl Court, by Total Vehicles and Total People *(Technical Analysis item 1 in 5.3.1)*, are provided in *Tables 32 and 33*.

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING (BOWL COURT) Calculation Factor: 1 DWELLS Count Type: TOTAL VEHICLES									
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	1	56	0.000	1	56	0.000	1	56	0.000
07:00-08:00	1	56	0.018	1	56	0.018	1	56	0.036
08:00-09:00	1	56	0.000	1	56	0.000	1	56	0.000
09:00-10:00	1	56	0.000	1	56	0.000	1	56	0.000
10:00-11:00	1	56	0.018	1	56	0.018	1	56	0.036
11:00-12:00	1	56	0.054	1	56	0.036	1	56	0.090
12:00-13:00	1	56	0.018	1	56	0.018	1	56	0.036
13:00-14:00	1	56	0.018	1	56	0.018	1	56	0.036
14:00-15:00	1	56	0.000	1	56	0.000	1	56	0.000
15:00-16:00	1	56	0.000	1	56	0.000	1	56	0.000
16:00-17:00	1	56	0.000	1	56	0.018	1	56	0.018
17:00-18:00	1	56	0.000	1	56	0.000	1	56	0.000
18:00-19:00	1	56	0.036	1	56	0.018	1	56	0.054
19:00-20:00	1	56	0.000	1	56	0.000	1	56	0.000
20:00-21:00	1	56	0.036	1	56	0.036	1	56	0.072
21:00-22:00	1	56	0.000	1	56	0.000	1	56	0.000
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			0.198			0.180			0.378

Table 32: Standard TRICS Total Vehicles Trip Rates per Dwelling (Bowl Court)

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING (BOWL COURT) Calculation Factor: 1 DWELLS Count Type: TOTAL PEOPLE									
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	1	56	0.000	1	56	0.125	1	56	0.125
07:00-08:00	1	56	0.036	1	56	0.143	1	56	0.179
08:00-09:00	1	56	0.018	1	56	0.393	1	56	0.411
09:00-10:00	1	56	0.071	1	56	0.179	1	56	0.250
10:00-11:00	1	56	0.071	1	56	0.071	1	56	0.142
11:00-12:00	1	56	0.054	1	56	0.143	1	56	0.197
12:00-13:00	1	56	0.161	1	56	0.196	1	56	0.357
13:00-14:00	1	56	0.143	1	56	0.089	1	56	0.232
14:00-15:00	1	56	0.054	1	56	0.089	1	56	0.143
15:00-16:00	1	56	0.339	1	56	0.143	1	56	0.482
16:00-17:00	1	56	0.393	1	56	0.232	1	56	0.625
17:00-18:00	1	56	0.196	1	56	0.446	1	56	0.642
18:00-19:00	1	56	0.268	1	56	0.107	1	56	0.375
19:00-20:00	1	56	0.339	1	56	0.179	1	56	0.518
20:00-21:00	1	56	0.214	1	56	0.089	1	56	0.303
21:00-22:00	1	56	0.179	1	56	0.036	1	56	0.215
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.536			2.660			5.196

Table 33: Standard TRICS Total People Trip Rates per Dwelling (Bowl Court)

6.4.2. The mode split for Bowl Court *(Technical Analysis item 2 in 5.3.1)*, covering the 0600-2200 survey duration with all inbound and outbound trips combined, is provided in *Figure 19*.

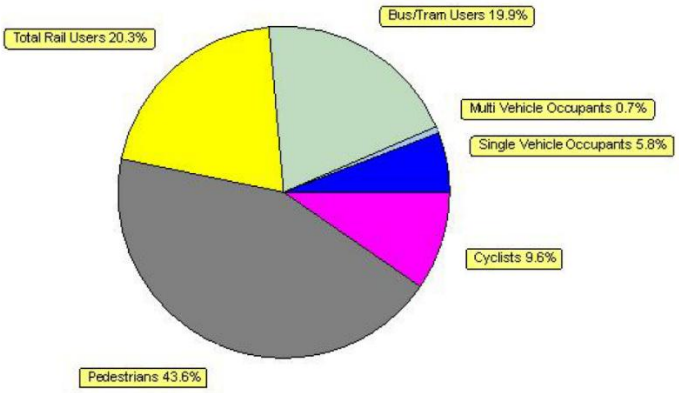


Figure 19: Mode Split 0600-2200 Inbound + Outbound (Bowl Court)

6.4.3. The TRICS Rank Order List comparison extracts *(Technical Analysis item 3 in 5.3.1)* for Bowl Court (separately for trip generation by Total Vehicles and by Total People) are provided in *Tables 34 and 35*. Note that these are just extracts as the Rank Order Lists would otherwise be very long. Bowl Court is highlighted in bold. The information provided indicates the total number of surveys in the Rank Order Lists for context.

RANK ORDER for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING (BOWL COURT) - TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 29
15th Percentile = no. 162
Total Number of Surveys = 191

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
181	BE-03-M-04	BLOCKS OF FLATS	SIDCUP	98	Wednesday	19/09/2018	0.490	0.469	0.959	0.59
182	BT-03-M-02	BLOCK OF FLATS	WEMBLEY	232	Monday	18/05/2015	0.440	0.517	0.957	0.42
183	HM-03-M-01	BLOCKS OF FLATS	FULHAM	1751	Wednesday	21/05/2014	0.453	0.500	0.953	0.69
184	EG-03-M-05	BLOCKS OF FLATS & HOUSES	ACTON	106	Wednesday	14/06/2017	0.406	0.472	0.878	0.31
185	DL-03-M-03	BLOCK OF FLATS	DUBLIN	14	Tuesday	05/09/2017	0.357	0.500	0.857	1.29
186	CS-03-M-01	BLOCK OF FLATS	SLIGO	47	Friday	08/09/2023	0.404	0.447	0.851	
187	SK-03-M-02	BLOCKS OF FLATS	PECKHAM	122	Thursday	22/11/2018	0.369	0.385	0.754	0.20
188	BT-03-M-01	BLOCK OF FLATS	WEMBLEY	284	Wednesday	03/06/2015	0.356	0.387	0.743	0.51
189	GR-03-M-01	BLOCKS OF FLATS	GREENWICH	226	Tuesday	25/11/2014	0.274	0.305	0.579	0.46
190	GR-03-M-02	BLOCKS OF FLATS	GREENWICH	455	Tuesday	13/12/2016	0.147	0.182	0.329	0.63
191	**HK-03-M-01**	**BLOCKS OF FLATS**	**SHOREDITCH**	**56**	**Monday**	**14/10/2024**	**0.161**	**0.143**	**0.304**	

Table 34: Total Vehicles Rank Order List (Position of Bowl Court)

RANK ORDER for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING (BOWL COURT) - TOTAL PEOPLE
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 1 DWELLS
85th Percentile = no. 23
15th Percentile = no. 129
Total Number of Surveys = 152

Rank	Site Ref	Description	Town/City	DWELLS	Day	Date	Arrivals	Departures	Totals	Parking Spaces Per Dwelling
141	SC-03-M-07	HOUSES/FLATS	GUILDFORD	199	Thursday	24/10/2013	2.101	2.166	4.267	1.35
142	SK-03-M-02	BLOCKS OF FLATS	PECKHAM	122	Thursday	22/11/2018	1.762	2.475	4.237	0.20
143	SC-03-M-06	HOUSES & FLATS	REDHILL	500	Wednesday	11/12/2013	2.100	2.134	4.234	1.76
144	BR-03-M-02	BLOCKS OF FLATS	BRISTOL	42	Monday	12/10/2009	2.119	2.024	4.143	1.02
145	DL-03-M-03	BLOCK OF FLATS	DUBLIN	14	Tuesday	05/09/2017	1.929	2.214	4.143	1.29
146	**HK-03-M-01**	**BLOCKS OF FLATS**	**SHOREDITCH**	**56**	**Monday**	**14/10/2024**	**1.804**	**2.232**	**4.036**	
147	KC-03-M-01	BLOCKS OF FLATS	RAMSGATE	103	Tuesday	08/12/2009	1.932	2.068	4.000	0.74
148	HM-03-M-01	BLOCKS OF FLATS	FULHAM	1751	Wednesday	21/05/2014	1.762	2.152	3.914	0.69
149	HC-03-M-02	BLOCKS OF FLATS	FARNBOROUGH	253	Monday	26/11/2012	1.834	1.957	3.791	0.87
150	BH-03-M-02	BLOCKS OF FLATS	PORTSLADE	111	Monday	30/09/2024	1.766	1.766	3.532	0.17
151	ES-03-M-16	MIXED HOUSES & FLATS	BEXHILL	119	Wednesday	10/07/2019	1.471	1.714	3.185	2.88

Table 35: Total People Rank Order List (Position of Bowl Court)

Analysis 2/4: Servicing & Delivery Trips by Vehicle & Activity Types

6.4.4. Summaries of Servicing and Delivery trips by Servicing Vehicle types and Servicing Activity types *(Technical Analysis items 4 and 5 in 5.3.1)* are provided in *Tables 36 and 37*, with corresponding pie charts *(Technical Analysis item 14 in 5.3.1)* provided in *Figures 20 and 21*.

BOWL COURT 03/M SERVICING VEHICLE TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
CARS	1	1	2	7.1%
LGV	4	4	8	28.6%
M/C	1	1	2	7.1%
OGV(1)	0	0	0	0.0%
OGV(2)	0	0	0	0.0%
P/C	7	7	14	50.0%
CARGO BIKES	1	1	2	7.1%
TOTAL	14	14	28	

Table 36: Summary of Trips by Servicing Vehicle Types (Bowl Court)

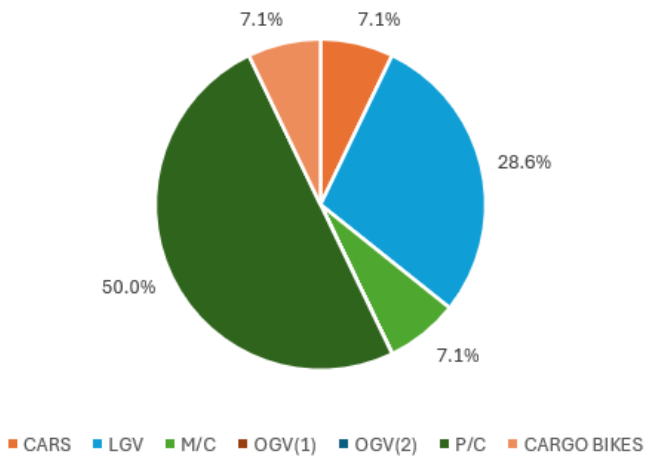


Figure 20: Servicing Vehicle Types Percentage Split (Bowl Court)

BOWL COURT 03/M SERVICING ACTIVITY TYPES				
TYPE	TRIPS			PERCENTAGE OF TOTAL
	INBOUND	OUTBOUND	TOTAL	
UTILITY	1	1	2	7.1%
FAST FOOD	7	7	14	50.0%
SUPERMARKET & GROCERIES	1	1	2	7.1%
COURIER & MAIL	5	5	10	35.7%
HOMEWARE	0	0	0	0.0%
WASTE & RECYCLING	0	0	0	0.0%
TOTAL	14	14	28	

Table 37: Summary of Trips by Servicing Activity Types (Bowl Court)

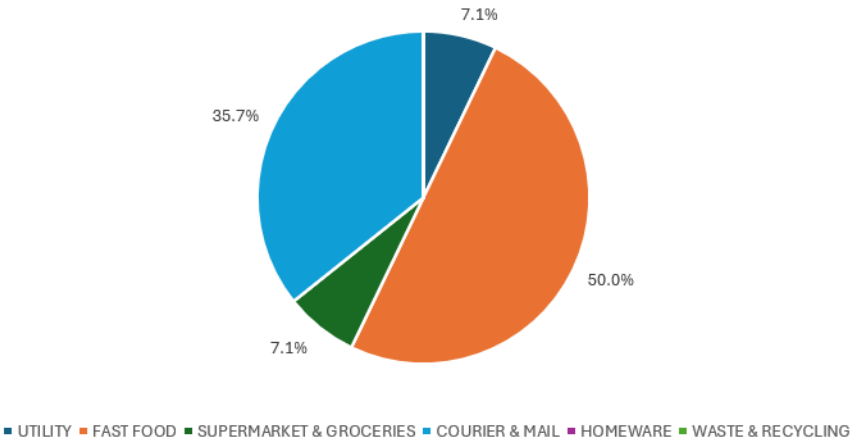


Figure 21: Servicing Activity Types Percentage Split (Bowl Court)

6.4.5. A table of all inbound and outbound Servicing and Delivery trips, broken down by Servicing Activity types (with all Servicing Vehicle Types combined), which is further broken down into hourly survey periods from 0600 until 2200 *(Technical Analysis item 6 in 5.3.1)*, is provided in *Table 38*. This table includes average Dwell Times for each Servicing Activity type.

BOWL COURT 03/M SERVICING ACTIVITY TYPES PER HOUR														
INBOUND							OUTBOUND							TOTAL
TIME PERIOD	TOTAL TRIPS						TIME PERIOD	TOTAL TRIPS						
	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING		UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	
06:00-07:00	0	0	0	0	0	0	06:00-07:00	0	0	0	0	0	0	0
07:00-08:00	0	0	0	0	0	0	07:00-08:00	0	0	0	0	0	0	0
08:00-09:00	0	0	0	0	0	0	08:00-09:00	0	0	0	0	0	0	0
09:00-10:00	0	0	0	0	0	0	09:00-10:00	0	0	0	0	0	0	0
10:00-11:00	0	0	0	1	0	0	10:00-11:00	0	0	0	1	0	0	2
11:00-12:00	1	0	0	1	0	0	11:00-12:00	1	0	0	1	0	0	4
12:00-13:00	0	0	0	1	0	0	12:00-13:00	0	0	0	1	0	0	2
13:00-14:00	0	0	0	1	0	0	13:00-14:00	0	0	0	1	0	0	2
14:00-15:00	0	0	0	0	0	0	14:00-15:00	0	0	0	0	0	0	0
15:00-16:00	0	0	0	1	0	0	15:00-16:00	0	0	0	1	0	0	2
16:00-17:00	0	0	1	0	0	0	16:00-17:00	0	0	1	0	0	0	2
17:00-18:00	0	0	0	0	0	0	17:00-18:00	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	18:00-19:00	0	0	0	0	0	0	0
19:00-20:00	0	4	0	0	0	0	19:00-20:00	0	4	0	0	0	0	8
20:00-21:00	0	2	0	0	0	0	20:00-21:00	0	2	0	0	0	0	4
21:00-22:00	0	1	0	0	0	0	21:00-22:00	0	1	0	0	0	0	2
TOTAL	1	7	1	5	0	0	TOTAL	1	7	1	5	0	0	28
AVERAGE DWELL TIME (MINUTES)	9	2	4	4	N/A	N/A	AVERAGE DWELL TIME (MINUTES)	9	2	4	4	N/A	N/A	

Table 38: Hourly Servicing & Delivery Trips by Servicing Activity Types (Bowl Court)

6.4.6. A table showing each Servicing Vehicle type and their average Dwell Times throughout the survey day, separated into inbound and outbound trips, is provided in *Table 39*, with a similar table showing each Servicing Activity type provided in *Table 40 (Technical Analysis items 7 and 8 in 5.3.1)*.

BOWL COURT 03/M SERVICING VEHICLE TYPES AVERAGE DWELL TIMES			
SERVICING VEHICLE TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
CARS	1	1	3
LGV	4	4	6
M/C	1	1	4
OGV(1)	0	0	N/A
OGV(2)	0	0	N/A
P/C	7	7	2
CARGO BIKES	1	1	3
TOTAL	14	14	18

Table 39: Servicing Vehicle Types with Average Dwell Times (Bowl Court)

BOWL COURT 03/M SERVICING ACTIVITY TYPES AVERAGE DWELL TIMES			
SERVICING ACTIVITY TYPE	TOTAL TRIPS		AVERAGE DWELL TIMES (MINUTES)
	INBOUND	OUTBOUND	
UTILITY	1	1	9
FAST FOOD	7	7	2
SUPERMARKET & GROCERIES	1	1	4
COURIER & MAIL	5	5	4
HOMEWARE	0	0	N/A
WASTE & RECYCLING	0	0	N/A
TOTAL	14	14	19

Table 40: Servicing Activity Types Trips with Average Dwell Times (Bowl Court)

Analysis 3/4: Servicing & Delivery Dwell Times

6.4.7. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Vehicle types *(Technical Analysis item 9 in 5.3.1)*, is provided in *Table 41*.

BOWL COURT 03/M SERVICING VEHICLE TYPES DWELL TIMES PER ARRIVAL TIME PERIOD						
SERVICING VEHICLE TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
CARS	0 to 2	0	0	0	0	0
	3 to 5	0	1	0	0	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
LGV	0 to 2	0	1	0	0	1
	3 to 5	0	2	0	0	2
	6 to 30	0	1	0	0	1
	31 or more	0	0	0	0	0
M/C	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	1	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
OGV(1)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
OGV(2)	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
P/C	0 to 2	0	0	0	4	4
	3 to 5	0	0	1	1	2
	6 to 30	0	0	0	1	1
	31 or more	0	0	0	0	0
CARGO BIKES	0 to 2	0	0	0	0	0
	3 to 5	0	0	1	0	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
TOTAL		0	5	2	7	

Table 41: Servicing Vehicle Types Dwell Times by Minute Ranges and Arrival Periods (Bowl Court)

6.4.8. A table of Dwell Times, split into various minute ranges and specific arrival periods throughout the day, and which is also split by Servicing Activity types *(Technical Analysis item 10 in 5.3.1)*, is provided in *Table 42*.

BOWL COURT 03/M SERVICING ACTIVITY TYPES DWELL TIMES PER ARRIVAL TIME PERIOD						
SERVICING ACTIVITY TYPE	DWELL TIME RANGE (MINUTES)	ARRIVAL TIME PERIODS				TOTAL
		06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00	
UTILITY	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	1	0	0	1
	31 or more	0	0	0	0	0
FAST FOOD	0 to 2	0	0	0	4	4
	3 to 5	0	0	0	2	2
	6 to 30	0	0	0	1	1
	31 or more	0	0	0	0	0
SUPERMARKET & GROCERIES	0 to 2	0	0	0	0	0
	3 to 5	0	0	1	0	1
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
COURIER & MAIL	0 to 2	0	1	0	0	1
	3 to 5	0	3	1	0	4
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
HOMEWARE	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
WASTE & RECYCLING	0 to 2	0	0	0	0	0
	3 to 5	0	0	0	0	0
	6 to 30	0	0	0	0	0
	31 or more	0	0	0	0	0
TOTAL		0	5	2	7	

Table 42: Servicing Activity Types Dwell Times by Minute Ranges and Arrival Periods (Bowl Court)

6.4.9. A pie chart showing the split between Dwell Time minute ranges for all Servicing and Delivery trips *(Technical Analysis item 14 in 5.3.1)*, is provided in *Figure 22*.

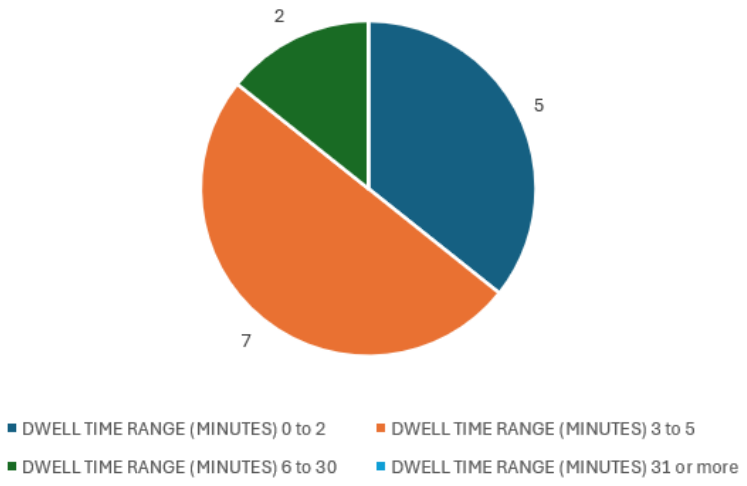


Figure 22: Dwell Time Minute Range Splits for Servicing & Delivery Trips (Bowl Court)

Analysis 4/4: Contextual Calculations & Servicing & Delivery Peaks

6.4.10. The number of Servicing and Delivery trips (inbound plus outbound) per 1 Dwelling *(Technical Analysis item 12 in 5.3.1)* is provided in *Table 43*.

Number of Dwellings	Number of Servicing Trips	Number of Servicing Trips per Dwelling
56	28	0.50

Table 43: Servicing & Delivery Trips (Inbound + Outbound) per 1 Dwelling (Bowl Court)

6.4.11. The number of inbound plus outbound Servicing and Delivery trips as a percentage of each vehicle type's total trips (meaning the trips generated by each development as a whole, including residents, visitors, etc) *(Technical Analysis item 13 in 5.3.1)*, is provided in *Table 44*.

Vehicle Type	Total Trips	Servicing Trips	Servicing Trips as a % of Total Trips
CAR	7	2	28.6%
LGV	8	8	100.0%
M/C	2	2	100.0%
OGV(1)	0	0	N/A
OGV(2)	0	0	N/A
P/C	28	14	50.0%
CARGO BIKE	2	2	100.0%

Table 44: Servicing & Delivery Trips (Inbound + Outbound) as a Percentage of Total Vehicle Trips (Bowl Court)

6.4.12. Tables and bar charts, each split by arrival periods throughout the day, one showing Servicing Vehicle types and the other showing Servicing Activity types, to illustrate peak periods of inbound Servicing & Delivery trips *(Technical Analysis item 15 in 5.3.1)*, are provided in *Tables 45 and 46* and *Figures 23 and 24*.

Servicing Vehicle Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
CAR	0	1	0	0
LGV	0	4	0	0
M/C	0	0	0	1
OGV(1)	0	0	0	0
OGV(2)	0	0	0	0
P/C	0	0	1	6
CARGO BIKE	0	0	1	0

Table 45: Trips by Servicing Vehicle Types by Arrival Periods (Bowl Court)

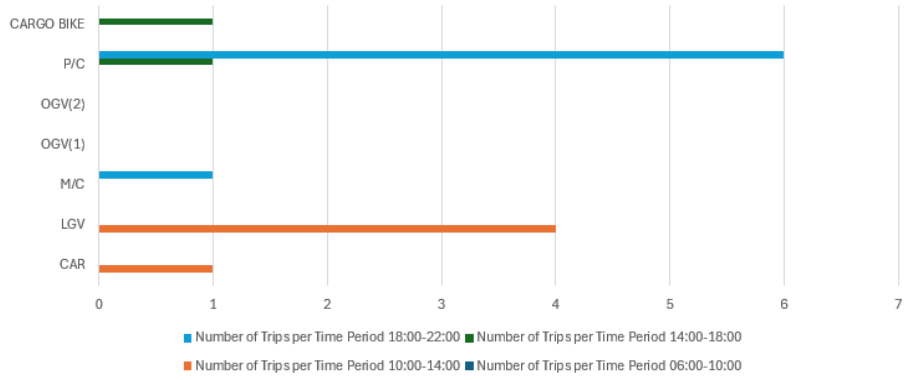


Figure 23: Indication of Peak Periods of Servicing Vehicle Types Trips (Bowl Court)

Servicing Activity Type	Number of Trips per Time Period			
	06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	0	1	0	0
FAST FOOD	0	0	0	7
SUPERMARKET & GROCERIES	0	0	1	0
COURIER & MAIL	0	4	1	0
HOMEWARE	0	0	0	0
WASTE & RECYCLING	0	0	0	0

Table 46: Trips by Servicing Activity Types by Arrival Periods (Bowl Court)

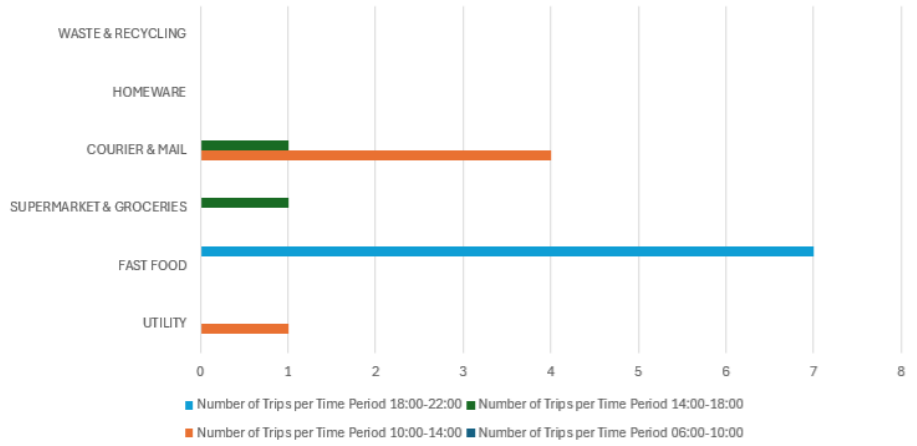


Figure 24: Indication of Peak Periods of Servicing Activity Types Trips (Bowl Court)

6.5. *Comparative Analysis*

6.5.1. The previous sections of this report provide detailed analysis of each of the three separate developments surveyed in a "case study" format. This section of the report combines key summary information from the developments for comparative purposes, from which observations can be made in *Section 7*.

6.5.2. Summaries of Servicing and Delivery trips by Servicing Vehicle and Servicing Activity types comparing all developments *(Technical Analysis item 16 in 5.3.1)*, with percentage breakdowns of trips shown for each type, are provided in *Tables 47 and 48*. It is important to note that the numbers of trips shown are the total inbound plus outbound trips for each development, also noting that for each development the number of inbound and outbound trips were equal (as can be seen in the corresponding tables for each development).

SUMMARY OF SERVICING VEHICLE TYPE TRIPS FOR ALL SITES						
SERVICING VEHICLE TYPE	CANALETTO TOWER 03/C		PORTER'S EDGE 03/C		BOWL COURT 03/M	
	TOTAL TRIPS	PERCENTAGE OF TOTAL	TOTAL TRIPS	PERCENTAGE OF TOTAL	TOTAL TRIPS	PERCENTAGE OF TOTAL
CARS	8	5.6%	10	7.0%	2	7.1%
LGV	46	31.9%	60	42.3%	8	28.6%
M/C	28	19.4%	44	31.0%	2	7.1%
OGV(1)	2	1.4%	0	0.0%	0	0.0%
OGV(2)	0	0.0%	0	0.0%	0	0.0%
P/C	56	38.9%	26	18.3%	14	50.0%
CARGO BIKES	4	2.8%	2	1.4%	2	7.1%
TOTAL	144		142		28	

Table 47: Summary of Trips (Inbound + Outbound) by Servicing Vehicle Types (All Developments)

SUMMARY OF SERVICING ACTIVITY TYPE TRIPS FOR ALL SITES						
SERVICING ACTIVTY TYPE	CANALETTO TOWER 03/C		PORTER'S EDGE 03/C		BOWL COURT 03/M	
	TOTAL TRIPS	PERCENTAGE OF TOTAL	TOTAL TRIPS	PERCENTAGE OF TOTAL	TOTAL TRIPS	PERCENTAGE OF TOTAL
UTILITY	8	5.6%	16	11.3%	2	7.1%
FAST FOOD	76	52.8%	68	47.9%	14	50.0%
SUPERMARKET & GROCERIES	22	15.3%	6	4.2%	2	7.1%
COURIER & MAIL	32	22.2%	50	35.2%	10	35.7%
HOMEWARE	4	2.8%	2	1.4%	0	0.0%
WASTE & RECYCLING	2	1.4%	0	0.0%	0	0.0%
TOTAL	144		142		28	

Table 48: Summary of Trips (Inbound + Outbound) by Servicing Activity Types (All Developments)

6.5.3. A table of all Servicing and Delivery trips (inbound plus outbound) comparing all developments, broken down by Servicing Activity types (with all Servicing Vehicle Types combined), which is further broken down into hourly survey periods from 0600 until 2200 *(Technical Analysis item 16 in 5.3.1)*, is provided in *Table 49*. This table includes average Dwell Times for each Servicing Activity type.

ALL SITES BY SERVICING ACTIVITY TOTAL TYPES TRIPS PER HOUR																				
TOTAL TRIPS (INBOUND + OUTBOUND)																				
TIME PERIOD	CANALETTO TOWER 03/C							PORTER'S EDGE 03/C							BOWL COURT 03/M						
	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	TOTAL	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	TOTAL	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	TOTAL
06:00-07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00-08:00	0	0	0	2	0	0	2	3	0	0	0	0	0	3	0	0	0	0	0	0	0
08:00-09:00	0	0	4	4	0	0	8	2	0	0	0	0	0	2	0	0	0	0	0	0	0
09:00-10:00	3	2	0	4	0	2	11	1	0	2	2	0	0	5	0	0	0	0	0	0	0
10:00-11:00	0	0	2	4	0	0	6	1	2	0	2	0	0	5	0	0	0	2	0	0	2
11:00-12:00	1	2	0	11	0	0	14	1	0	0	0	0	0	1	2	0	0	2	0	0	4
12:00-13:00	0	2	4	7	2	0	15	1	2	0	16	0	0	19	0	0	0	2	0	0	2
13:00-14:00	0	8	0	0	2	0	10	1	10	0	15	0	0	26	0	0	0	2	0	0	2
14:00-15:00	0	4	2	0	0	0	6	3	2	0	5	0	0	10	0	0	0	0	0	0	0
15:00-16:00	0	2	2	0	0	0	4	0	4	2	4	1	0	11	0	0	0	2	0	0	2
16:00-17:00	3	2	0	0	0	0	5	3	2	0	1	1	0	7	0	0	2	0	0	0	2
17:00-18:00	1	9	2	0	0	0	12	0	2	0	5	0	0	7	0	0	0	0	0	0	0
18:00-19:00	0	11	2	0	0	0	13	0	10	0	0	0	0	10	0	0	0	0	0	0	0
19:00-20:00	0	14	0	0	0	0	14	0	12	2	0	0	0	14	0	8	0	0	0	0	8
20:00-21:00	0	12	2	0	0	0	14	0	8	0	0	0	0	8	0	4	0	0	0	0	4
21:00-22:00	0	8	2	0	0	0	10	0	14	0	0	0	0	14	0	2	0	0	0	0	2
TOTAL	8	76	22	32	4	2	144	16	68	6	50	2	0	142	2	14	2	10	0	0	28
AVERAGE DWELL TIME (MINUTES)	36	4	4	2	8	13	67	207	3	3	3	5	N/A	221	9	2	4	4	N/A	N/A	19

Table 49: Hourly Servicing & Delivery Trips (Inbound + Outbound) by Servicing Activity Types (All Developments)

6.5.4. A table showing each Servicing Vehicle type and their average Dwell Times throughout the survey day comparing all developments (inbound plus outbound trips), is provided in *Table 50*, with a similar table showing each Servicing Activity type provided in *Table 51 (Technical Analysis item 16 in 5.3.1)*.

ALL SITES COMPARISON OF SERVICING VEHICLE TYPES AVERAGE DWELL TIMES						
SERVICING VEHICLE TYPE	CANALETTO TOWER 03/C		PORTER'S EDGE 03/C		BOWL COURT 03/M	
	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)
CARS	8	2	10	111	2	3
LGV	46	9	60	39	8	6
M/C	28	3	44	4	2	4
OGV(1)	2	13	0	N/A	0	N/A
OGV(2)	0	N/A	0	N/A	0	N/A
P/C	56	4	26	3	14	2
CARGO BIKES	4	1	2	4	2	3
TOTAL	144	32	142	161	28	18

Table 50: Servicing Vehicle Types (Inbound + Outbound) with Average Dwell Times (All Developments)

ALL SITES COMPARISON OF SERVICING ACTIVITY TYPES AVERAGE DWELL TIMES						
SERVICING ACTIVITY TYPE	CANALETTO TOWER 03/C		PORTER'S EDGE 03/C		BOWL COURT 03/M	
	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)	TOTAL TRIPS	AVERAGE DWELL TIMES (MINUTES)
UTILITY	8	36	16	207	2	9
FAST FOOD	76	4	68	3	14	2
SUPERMARKET & GROCERIES	22	4	6	3	2	4
COURIER & MAIL	32	2	50	3	10	4
HOMEWARE	4	8	2	5	0	N/A
WASTE & RECYCLING	2	13	0	N/A	0	N/A
TOTAL	144	67	142	221	28	19

Table 51: Servicing Activity Types (Inbound + Outbound) with Average Dwell Times (All Developments)

6.5.5. A table of Dwell Times comparing all developments, split into various minute ranges (covering the 0600-2200 survey duration), which is also split by Servicing Vehicle types *(Technical Analysis item 16 in 5.3.1)*, is provided in *Table 52*.

ALL SITES SERVICING VEHICLE TYPES DWELL TIMES SUMMARY				
SERVICING VEHICLE TYPE	DWELL TIME RANGE (MINUTES)	TOTAL PER DWELL TIME RANGE PER SITE		
		CANALETTO TOWER 03/C	PORTER'S EDGE 03/C	BOWL COURT 03/M
CARS	0 to 2	2	1	0
	3 to 5	1	1	1
	6 to 30	0	1	0
	31 or more	0	2	0
LGV	0 to 2	10	10	1
	3 to 5	9	11	2
	6 to 30	3	6	1
	31 or more	1	3	0
M/C	0 to 2	5	5	0
	3 to 5	10	15	1
	6 to 30	0	2	0
	31 or more	0	0	0
OGV(1)	0 to 2	0	0	0
	3 to 5	0	0	0
	6 to 30	1	0	0
	31 or more	0	0	0
OGV(2)	0 to 2	0	0	0
	3 to 5	0	0	0
	6 to 30	0	0	0
	31 or more	0	0	0
P/C	0 to 2	2	3	4
	3 to 5	24	10	2
	6 to 30	2	0	1
	31 or more	0	0	0
CARGO BIKE	0 to 2	2	0	0
	3 to 5	0	1	1
	6 to 30	0	0	0
	31 or more	0	0	0
TOTAL		72	71	14

Table 52: Servicing Vehicle Types Dwell Times by Minute Ranges (All Developments)

6.5.6. A table of Dwell Times comparing all developments, split into various minute ranges (covering the 0600-2200 survey duration), which is also split by Servicing Activity types *(Technical Analysis item 16 in 5.3.1)*, is provided in *Table 53*.

ALL SITES SERVICING ACTIVITY TYPES DWELL TIMES SUMMARY				
SERVICING ACTIVITY TYPE	DWELL TIME RANGE (MINUTES)	TOTAL PER DWELL TIME RANGE PER SITE		
		CANALETTO TOWER 03/C	PORTER'S EDGE 03/C	BOWL COURT 03/M
UTILITY	0 to 2	0	0	0
	3 to 5	2	1	0
	6 to 30	1	1	1
	31 or more	1	6	0
FAST FOOD	0 to 2	7	7	4
	3 to 5	29	26	2
	6 to 30	2	1	1
	31 or more	0	0	0
SUPERMARKET & GROCERIES	0 to 2	3	2	0
	3 to 5	7	0	1
	6 to 30	1	1	0
	31 or more	0	0	0
COURIER & MAIL	0 to 2	12	10	1
	3 to 5	4	10	4
	6 to 30	0	5	0
	31 or more	0	0	0
HOMEWARE	0 to 2	0	0	0
	3 to 5	1	1	0
	6 to 30	1	0	0
	31 or more	0	0	0
WASTE & RECYCLING	0 to 2	0	0	0
	3 to 5	0	0	0
	6 to 30	1	0	0
	31 or more	0	0	0
TOTAL		72	71	14

Table 53: Servicing Activity Types Dwell Times by Minute Ranges (All Developments)

6.5.7. A summary table comparing all developments, showing Servicing and Delivery trip percentage breakdowns by Servicing Activity types, which is further split by Servicing Vehicle types *(Technical Analysis item 16 in 5.3.1)*, is provided in *Table 54*. The percentages are also split further into arrival time periods, providing a comprehensive breakdown of the proportions of Servicing and Delivery trips across all types and arrival times.

ALL SITES COMPARISON TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND ARRIVAL TIME PERIOD

SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS			SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE			% OF SERVICING ACTIVITY TYPE BY MODE PER ARRIVAL TIME PERIOD											
								06:00-10:00			10:00-14:00			14:00-18:00			18:00-22:00		
	CT	PE	BC		CT	PE	BC	CT	PE	BC	CT	PE	BC	CT	PE	BC	CT	PE	BC
UTILITY	5.6%	11.3%	7.1%	CARS		37.5%			12.5%			12.5%			12.5%				
				LGV	100.0%	62.5%	100.0%	50.0%	50.0%			12.5%	100.0%	50.0%					
				M/C															
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE															
				TOTAL				50.0%	62.5%			25.0%	100.0%	50.0%	12.5%				
FAST FOOD	52.8%	47.9%	50.0%	CARS															
				LGV															
				M/C	31.6%	58.8%	14.3%				7.9%	5.9%		7.9%	11.8%		15.8%	41.2%	14.3%
				OGV(1)															
				OGV(2)															
				P/C	68.4%	38.2%	85.7%	2.6%			10.5%	14.7%		13.2%	2.9%		42.1%	20.6%	85.7%
				CARGO BIKE		2.9%												2.9%	
				TOTAL				2.6%			18.4%	20.6%		21.1%	14.7%		57.9%	64.7%	100.0%
SUPERMARKET & GROCERIES	15.3%	4.2%	7.1%	CARS	9.1%						9.1%								
				LGV	54.5%	100.0%		18.2%	33.3%		9.1%	33.3%		18.2%			9.1%	33.3%	
				M/C	18.2%									9.1%			9.1%		
				OGV(1)															
				OGV(2)															
				P/C	18.2%		100.0%				9.1%					100.0%	9.1%		
				CARGO BIKE															
				TOTAL				18.2%	33.3%		27.3%	33.3%		27.3%		100.0%	27.3%	33.3%	
COURIER & MAIL	22.2%	35.2%	35.7%	CARS	18.8%	8.0%	20.0%	12.5%			6.3%		20.0%		8.0%				
				LGV	68.8%	84.0%	60.0%	18.8%	4.0%		50.0%	64.0%	60.0%		16.0%				
				M/C		8.0%						4.0%			4.0%				
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE	12.5%		20.0%				12.5%					20.0%			
				TOTAL				31.3%	4.0%		68.8%	68.0%	80.0%		28.0%	20.0%			
HOMEWARE	2.8%	1.4%	0.0%	CARS															
				LGV	100.0%	100.0%					100.0%				100.0%				
				M/C															
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE															
				TOTAL							100.0%				100.0%				
WASTE & RECYCLING	1.4%	0.0%	0.0%	CARS															
				LGV															
				M/C															
				OGV(1)	100.0%			100.0%											
				OGV(2)															
				P/C															
				CARGO BIKE															
				TOTAL				100.0%											
TOTAL %								33.7%	20.0%		35.7%	29.4%	45.0%	16.4%	31.0%	30.0%	14.2%	19.6%	25.0%

Table 54: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Arrival Times (All Developments)

KEY: *CT (Canaletto Tower)*
PE (Porter's Edge)
BC (Bowl Court)

6.5.8. A summary table comparing all developments, showing Servicing and Delivery trip percentage breakdowns by Servicing Activity types, which is further split by Servicing Vehicle types *(Technical Analysis item 16 in 5.3.1)*, is provided in *Table 55*. The percentages are also split further into Dwell Time minute ranges, providing a comprehensive breakdown of the proportions of Servicing and Delivery trips across all types and Dwell Times.

CANALETTO TOWER 03/C TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND DWELL TIME RANGE

SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS			SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE			% OF SERVICING ACTIVITY TYPE BY MODE PER DWELL RANGE (MINUTES)											
								0 to 2			3 to 5			6 to 30			31 or more		
	CT	PE	BC		CT	PE	BC	CT	PE	BC	CT	PE	BC	CT	PE	BC	CT	PE	BC
UTILITY	5.6%	11.3%	7.1%	CARS		37.5%									12.5%			25.0%	
				LGV	100.0%	62.5%	100.0%				50.0%	12.5%		25.0%		100.0%	25.0%	50.0%	
				M/C															
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE															
				TOTAL							50.0%	12.5%		25.0%	12.5%	100.0%	25.0%	75.0%	
FAST FOOD	52.8%	47.9%	50.0%	CARS															
				LGV															
				M/C	31.6%	58.8%	14.3%	13.2%	11.8%		18.4%	44.1%	14.3%		2.9%				
				OGV(1)															
				OGV(2)															
				P/C	68.4%	38.2%	85.7%	5.3%	8.8%	42.9%	57.9%	29.4%	28.6%	5.3%		14.3%			
				CARGO BIKE		2.9%						2.9%							
				TOTAL				18.4%	20.6%	42.9%	76.3%	76.4%	42.9%	5.3%	2.9%	14.3%			
SUPERMARKET & GROCERIES	15.3%	4.2%	7.1%	CARS	9.1%						9.1%								
				LGV	54.5%	100.0%		27.3%	33.3%		18.2%	66.7%		9.1%					
				M/C	18.2%						18.2%								
				OGV(1)															
				OGV(2)															
				P/C	18.2%		100.0%				18.2%		100.0%						
				CARGO BIKE															
				TOTAL				27.3%	33.3%		63.6%	66.7%	100.0%	9.1%					
COURIER & MAIL	22.2%	35.2%	35.7%	CARS	18.8%	8.0%	20.0%	18.8%	4.0%			4.0%	20.0%						
				LGV	68.8%	84.0%	60.0%	43.8%	32.0%	20.0%	25.0%	36.0%	20.0%		16.0%	20.0%			
				M/C		8.0%			4.0%						4.0%				
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE	12.5%		20.0%	12.5%					20.0%						
				TOTAL				75.0%	40.0%	20.0%	25.0%	40.0%	60.0%		20.0%	20.0%			
HOMEWARE	2.8%	1.4%	0.0%	CARS															
				LGV	100.0%	100.0%					100.0%	100.0%							
				M/C															
				OGV(1)															
				OGV(2)															
				P/C															
				CARGO BIKE															
				TOTAL							100.0%	100.0%							
WASTE & RECYCLING	1.4%	0.0%	0.0%	CARS															
				LGV															
				M/C															
				OGV(1)										100.0%					
				OGV(2)	100.0%														
				P/C															
				CARGO BIKE															
				TOTAL										100.0%					
TOTAL %								20.1%	18.8%	15.7%	52.5%	59.1%	50.7%	23.2%	7.1%	33.6%	4.2%	15.0%	

Table 55: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Dwell Time Minute Ranges (All Developments)

KEY: *CT (Canaletto Tower)*
PE (Porter's Edge)
BC (Bowl Court)

6.5.9. A table comparing the totals of all Servicing and Delivery trips (inbound plus outbound) at the three developments *(Technical Analysis item 17 in 5.3.1)*, is provided in *Table 56*.

SUMMARY OF TOTAL SERVICING ACTIVITY	
SITE NAME	TOTAL TRIPS
CANALETTO TOWER 03/C	144
PORTER'S EDGE 03/C	142
BOWL COURT 03/M	28

Table 56: Total (Inbound + Outbound) Servicing & Delivery Trips (All Developments)

6.5.10. A table comparing total Servicing and Delivery trips (inbound plus outbound) at the three developments, broken down by Servicing Vehicle types *(Technical Analysis item 17 in 5.3.1)*, is provided in *Table 57*.

SUMMARY OF TOTAL SERVICING TRIPS PER VEHICLE TYPE								
SITE NAME	SERVICING VEHICLE TYPE							TOTAL
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKE	
CANALETTO TOWER 03/C	8	46	28	2	0	56	4	144
PORTER'S EDGE 03/C	10	60	44	0	0	26	2	142
BOWL COURT 03/M	2	8	2	0	0	14	2	28

Table 57: Total (Inbound + Outbound) Servicing & Delivery Trips by Servicing Vehicle Types (All Developments)

6.5.11. A table comparing total Servicing and Delivery trips (inbound plus outbound) at the three developments, broken down by Servicing Activity types *(Technical Analysis item 17 in 5.3.1)*, is provided in *Table 58*.

SUMMARY OF TOTAL SERVICING TRIPS PER ACTIVITY TYPE							
SITE NAME	SERVICING ACTIVITY TYPE						TOTAL
	UTILITY	FAST FOOD	SUPERMARKET & GROCERIES	COURIER & MAIL	HOMEWARE	WASTE & RECYCLING	
CANALETTO TOWER 03/C	8	76	22	32	4	2	144
PORTER'S EDGE 03/C	16	68	6	50	2	0	142
BOWL COURT 03/M	2	14	2	10	0	0	28

Table 58: Total (Inbound + Outbound) Servicing & Delivery Trips by Servicing Activity Types (All Developments)

6.5.12. A table comparing Dwell Times of Servicing and Delivery trips at the three developments, broken down by Dwell Time minute ranges *(Technical Analysis item 17 in 5.3.1)*, is provided in *Table 59*.

SUMMARY OF TOTAL SERVICING TRIPS PER DWELL TIME RANGE					
SITE NAME	DWELL TIME RANGE (MINUTES)				TOTAL
	0 to 2	3 to 5	6 to 30	31 or more	
CANALETTO TOWER 03/C	22	43	6	1	72
PORTER'S EDGE 03/C	19	38	9	5	71
BOWL COURT 03/M	5	7	2	0	14

Table 59: Servicing & Delivery Trips by Dwell Time Minute Ranges (All Developments)

6.5.13. A series of tables comparing average Dwell Times for each development, with each table focusing on one Servicing Activity type which is then split by Servicing Vehicle types *(Technical Analysis item 18 in 5.3.1)*, are provided in *Tables 60 to 65*.

SITE NAME	SERVICING ACTIVITY TYPE - UTILITY								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	AVERAGE DWELL TIME (MINUTES)							TOTAL	
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES		
CANALETTO TOWER 03/C		36						36	36
PORTER'S EDGE 03/C	183	220						403	202
BOWL COURT 03/M		9						9	9

Table 60: Average Dwell Times (Utility Service Activity Type) by Servicing Vehicle Types (All Developments)

SITE NAME	SERVICING ACTIVITY TYPE - FAST FOOD								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	AVERAGE DWELL TIME (MINUTES)							TOTAL	
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES		
CANALETTO TOWER 03/C			3			4		7	4
PORTER'S EDGE 03/C			4			3	4	11	4
BOWL COURT 03/M			4			2		6	3

Table 61: Average Dwell Times (Fast Food Service Activity Type) by Servicing Vehicle Types (All Developments)

SITE NAME	SERVICING ACTIVITY TYPE - SUPERMARKET & GROCERIES								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	AVERAGE DWELL TIME (MINUTES)							TOTAL	
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES		
CANALETTO TOWER 03/C	3	4	4			4		15	4
PORTER'S EDGE 03/C		3						3	3
BOWL COURT 03/M						4		4	4

Table 62: Average Dwell Times (Supermarket & Groceries Service Activity Type) by Servicing Vehicle Types (All Developments)

SITE NAME	SERVICING ACTIVITY TYPE - COURIER & MAIL								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	AVERAGE DWELL TIME (MINUTES)							TOTAL	
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES		
CANALETTO TOWER 03/C	1	2					1	4	1
PORTER'S EDGE 03/C	2	3	3					8	3
BOWL COURT 03/M	3	4					3	10	3

Table 63: Average Dwell Times (Courier & Mail Service Activity Type) by Servicing Vehicle Types (All Developments)

SITE NAME	SERVICING ACTIVITY TYPE - HOMEWARE								
	AVERAGE DWELL TIME (MINUTES)								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES	TOTAL	
CANALETTO TOWER 03/C		8						8	8
PORTER'S EDGE 03/C		5						5	5
BOWL COURT 03/M								0	N/A

Table 64: Average Dwell Times (Homeware Service Activity Type) by Servicing Vehicle Types (All Developments)

SITE NAME	SERVICING ACTIVITY TYPE - WASTE & RECYCLING								
	AVERAGE DWELL TIME (MINUTES)								AVG. DWELL TIME FOR ALL SERVICING VEHICLE TYPES
	CARS	LGV	M/C	OGV(1)	OGV(2)	P/C	CARGO BIKES	TOTAL	
CANALETTO TOWER 03/C				13				13	13
PORTER'S EDGE 03/C								0	N/A
BOWL COURT 03/M								0	N/A

Table 65: Average Dwell Times (Waste & Recycling Service Activity Type) by Servicing Vehicle Types (All Developments)

6.5.14. *Tables 60 to 65* are combined in a single *Table 66*, with total average Dwell Time minutes shown for each development.

SERVICING ACTIVITY TYPE	SERVICING VEHICLE TYPE	AVERAGE DWELL TIME PER VEHICLE TYPE PER SITE (MINUTES)		
		CANALETTO TOWER 03/C	PORTER'S EDGE 03/C	BOWL COURT 03/M
UTILITY	CARS		184	
	LGV	36	220	9
	M/C			
	OGV(1)			
	OGV(2)			
	P/C			
	CARGO BIKES			
	AVG. DWELL TIME	**36**	**202**	**9**
FAST FOOD	CARS			
	LGV			
	M/C	3	4	4
	OGV(1)			
	OGV(2)			
	P/C	4	3	2
	CARGO BIKES		4	
	AVG. DWELL TIME	**4**	**4**	**3**
SUPERMARKET & GROCERIES	CARS	3		
	LGV	4	3	
	M/C	4		
	OGV(1)			
	OGV(2)			
	P/C	4		4
	CARGO BIKES			
	AVG. DWELL TIME	**4**	**3**	**4**
COURIER & MAIL	CARS	1	2	3
	LGV	2	3	4
	M/C		3	
	OGV(1)			
	OGV(2)			
	P/C			
	CARGO BIKES	1		3
	AVG. DWELL TIME	**1**	**3**	**3**
HOMEWARE	CARS			
	LGV	8	5	
	M/C			
	OGV(1)			
	OGV(2)			
	P/C			
	CARGO BIKES			
	AVG. DWELL TIME	**8**	**5**	**N/A**
WASTE & RECYCLING	CARS			
	LGV			
	M/C			
	OGV(1)	13		
	OGV(2)			
	P/C			
	CARGO BIKES			
	AVG. DWELL TIME	**13**	**N/A**	**N/A**
TOTAL AVERAGE (MINUTES)		11	43	5

Table 66: Average Dwell Times by Servicing Activity Types, Split by Servicing Vehicle Types (All Developments)

7. Observations

7.1. TRICS does not intend to provide any explanations, suggestions or reasoning behind the results that have been obtained through this Research Project's Technical Analysis. Therefore, any speculative conclusions to be drawn from the results presented in this report will be down to the professional judgement of practitioners, and none will be the opinion of TRICS Consortium Limited. However, TRICS can provide some technical observations that might assist practitioners in this process.

7.2. The wealth of data on Servicing and Delivery trips within this study allows for countless observations, with the breakdown of Servicing Vehicle and Servicing Activity types providing 42 separate sets of data. Add to this the recording of Dwell Times for every individual act of servicing taking place at each of the three developments, and there is an almost endless list of observations that can be made. The technical observations provided in this section cover some selected highlights that we hope will be a good starting point for studying this reports' data further.

7.3. Readers are reminded that two of the developments (Canaletto Tower and Porter's Edge) fall within the 03/C (Flats Privately Owned) TRICS land use sub-category, whilst Bowl Court fell within the 03/M (Mixed Private/Affordable Housing) land use sub-category due to its split between privately owned and non-privately owned dwellings. Although this section of the report does not make any direct comparisons between the land use sub-categories due to the fact that Bowl Court is a sample of one, readers are encouraged to study the data provided should they wish to make their own comparisons.

7.4. It is also important to note that the survey sample for this project was just three developments, with surveys being undertaken on a single day at each. Although this study has provided a wealth of information and detail, which we hope will be helpful for practitioners when assessing future similar developments, all results should be received and interpreted in this context.

Standard TRICS Trip Generation Observations

7.5. In the standard TRICS surveys which included all trips (i.e., residents, visitors and servicing), total survey duration (0700-2200) inbound plus outbound Total Vehicles trip generation per 1 Dwelling varied between the three developments with a range of 0.378 (Bowl Court) to 1.067 (Canaletto Tower). This is a variation of 0.689 Total Vehicle trips per 1 Dwelling between the developments.

7.6. In the standard TRICS surveys which included all trips (i.e., residents, visitors and servicing), total survey duration (0700-2200) inbound plus outbound Total People trip generation per 1 Dwelling varied between the three developments with a range of 4.572 (Canaletto Tower) to 5.377 (Porter's Edge). This is a variation of 0.805 between the developments.

7.7. When Total Vehicle trip rates per 1 Dwelling in the standard TRICS surveys were compared with other surveys in Rank Order Lists, with the survey showing the highest trip generation per 1 Dwelling always shown at the top of the list, Canaletto Tower was positioned 85% of the way down the list, Porter's Edge was positioned 94% of the way down the list, and Bowl Court was positioned 100% of the way down the list. Therefore, the Total Vehicles range down Rank Order Lists for the three developments was from 85% to 100%. See *3.4*, which discusses "technical occupancy" and "physical occupancy" of dwellings. We do not know the physical occupancy of the surveyed developments at the time the surveys took place, so TRICS encourages practitioners to examine this area further when considering occupancy levels at other developments, and we hope that the information provided is a helpful starting point.

7.8. When Total People trip rates per 1 Dwelling in the standard TRICS surveys were compared with other surveys in Rank Order Lists, with the survey showing the highest trip generation per 1 Dwelling always shown at the top of the list, Canaletto Tower was positioned 85% of the way down the list, Porter's Edge was positioned 71% of the way down the list, and Bowl Court was positioned 96% of the way down the list. Therefore, the Total People range down Rank Order Lists for the three developments was from 71% to 96%. See *3.4*, which discusses "technical occupancy" and "physical occupancy" of

dwellings. We do not know the physical occupancy of the surveyed developments at the time the surveys took place, so TRICS encourages practitioners to examine this area further when considering occupancy levels at other developments, and we hope that the information provided is a helpful starting point.

General Observations of Servicing and Delivery Trips

7.9. The total number of Servicing and Delivery trips on the network (inbound plus outbound) undertaken throughout the surveys per 1 Dwelling varied between a minimum of 0.50 (Bowl Court) and a maximum of 0.76 (Canaletto Tower), this being a range of 0.26 per 1 Dwelling between the three developments. However, this is based on the surveys recording only Servicing and Delivery trips arriving at the developments and departing from them, and not accounting for trips that might have served multiple apartments in a single visit. Therefore, this should be understood in the correct context.

7.10. The percentage of overall Total Vehicle trips that were Servicing and Delivery trips at the three developments ranged between a minimum of 60% (Bowl Court) and a maximum of 66% (Porter's Edge), so a variation between the developments of 6%. Readers should note that Canaletto Tower was the only development out of the three which had on-site parking available (with 88 charged spaces).

7.11. Canaletto Tower's busiest Servicing and Delivery arrivals period was 1800-2200 with 35% of all trips taking place at that time, with the second busiest period being 1000-1400 with 32% of all trips taking place at that time. This development's least busy period was 0600-1000 with 15% of all trips taking place at that time.

7.12. Porters Edge's busiest Servicing and Delivery arrivals period was 1000-1400 with 37% of all trips taking place at that time, with the second busiest period being 1800-2200 with 32% of all trips taking place at that time. This development's least busy period was 0600-1000 with 10% of all trips taking place at that time.

7.13. Bowl Court's busiest Servicing and Delivery arrivals period was 1800-2200 with 50% of all trips taking place at that time, with the second busiest period being 1000-1400 with 36% of all trips taking place at that time. This development's least busy period was 0600-1000 with 0% of all trips taking place at that time.

Observations of Servicing Vehicle Types

7.14. Across the three developments combined, the most common Servicing Vehicle type was Pedal Cycles, generating an average of 35.7% of all Servicing and Delivery trips. This was followed by LGVs, which generated 34.3% of trips, and then Motorcycles with 19.2% of trips. *Table 67* provides the percentages of each Servicing Vehicle Type for each development and the averages.

Servicing Vehicle	Canaletto Tower	Porter's Edge	Bowl Court	Average %
Car	5.6	7.0	7.1	**6.6**
LGV	31.9	42.3	28.6	**34.3**
Motorcycle	19.4	31.0	7.1	**19.2**
OGV1	1.4	0.0	0.0	**0.5**
OGV2	0.0	0.0	0.0	**0.0**
Pedal Cycle	38.9	18.3	50.0	**35.7**
Cargo Bike	2.8	1.4	7.1	**3.8**

Table 67: Percentage Splits of all Servicing Vehicle Types Trips (All Developments & Averages)

7.15. Across the three developments combined, there was no peak arrivals period for the Car Servicing Vehicle type, with 33.3% of trips taking place during 0600-1000, 1000-1400 and 1400-1800. For LGVs the peak arrivals period was 1000-1400 (56.1% of trips), and for Motorcycle the peak arrivals period was 1800-2200 (57.9% of trips). There was just a single OGV1 trip recorded in the study, with this taking place during 0600-1000, and there were no OGV2 trips recorded. The peak arrivals period for the Pedal Cycle Servicing Vehicle type was 1800-2200 (62.5% of trips), and for Cargo Bike the peak arrivals period was 1000-1400 (50.0% of trips).

Observations of Servicing Activity Types

7.16. Across the three developments combined, the most common Servicing Activity type was Fast Food, generating an average of 50.2% of all Servicing and Delivery trips. This was followed by Courier & Mail, which generated 31.0% of trips, and then Supermarket & Groceries with 8.9% of trips. *Table 68* provides the percentages of each Servicing Activity Type for each development and the averages.

Servicing Activity	Canaletto Tower	Porter's Edge	Bowl Court	Average %
Utility	5.6	11.3	7.1	**8.0**
Fast Food	52.8	47.9	50.0	**50.2**
Supermarket & Groceries	15.3	4.2	7.1	**8.9**
Courier & Mail	22.2	35.2	35.7	**31.0**
Homeware	2.8	1.4	0.0	**1.4**
Waste & Recycling	1.4	0.0	0.0	**0.5**

Table 68: Percentage Splits of all Servicing Activity Types Trips (All Developments & Averages)

7.17. Across the three developments combined, the peak arrivals period of Servicing and Delivery trips for the Utility Servicing Activity type was 0600-1000, with 53.8% of trips taking place. For Fast Food the peak arrivals period was 1800-2200 (64.6% of trips), and for Supermarket & Groceries the peak arrivals period was 1400-1800 (33.3% of trips), although this Servicing Activity type saw trips more spread out throughout the day. The peak arrivals period for Courier & Mail was 1000-1400 (69.6% of trips), for Homeware the peak was 1000-1400 (66.7% of trips although there were just 3 arrivals in total across the surveys), and for Waste & Recycling the peak was 0600-1000 (100.0% of trips although there was just 1 arrival across the surveys).

Observations of Dwell Times

7.18. The average Dwell Time of a Servicing and Delivery trip at Canaletto Tower was 11 minutes. For Porter's Edge it was 43 minutes, and for Bowl Court it was 5 minutes. Although all results of this study have been double checked and are confirmed as correct, there is clearly an anomaly with the Porter's Edge development, which is discussed further in *7.19 and 7.20*.

7.19. Across the three developments, the Servicing Vehicle type with the highest Dwell Time was Car, with an average of 57 minutes. This was followed by LGV with an Average Dwell Time of 25 minutes, and then OGV(1) with an average Dwell Time of 13 minutes (although only a single OGV arrived at and departed across all surveys). Motorcycle had an average Dwell Time of 4 minutes, with Pedal Cycle being 3 minutes and Cargo Bike being 2 minutes. There were no OGV2 trips at all recorded during the surveys. *Table 69* provides the total Dwell Time minutes for each Servicing Vehicle type along with the inbound trips and the average Dwell Times. **It is important to apply caution to the Car and LGV Dwell Time averages, as they have been highly skewed due to the identified Utility Servicing Activity that was taking place at the Porter's Edge development** *(see 7.20).* It is recommended that readers examine the Dwell Times for each of the individual developments in *Section 6* for greater context.

Servicing Vehicle	Total Dwell Minutes	Total Inbound Trips	Average Dwell Time
Car	566	10	57
LGV	1401	57	25
Motorcycle	134	37	4
OGV1	13	1	13
OGV2	0	0	0
Pedal Cycle	165	48	3
Cargo Bike	9	4	2

Caution should be applied to Car and LGV averages

Table 69: Average Dwell Times by Servicing Vehicle Types (All Developments)

7.20. Across the three developments, the Servicing Activity type with the highest Dwell Time was Utility, with an average of 28 minutes. This was followed by Waste & Recycling with an Average Dwell Time of 13 minutes (although only a single instance of this type took place across all surveys). Homeware had an average Dwell Time of 7 minutes, with Supermarket & Groceries being 4 minutes, and both Fast Food and Courier & Mail being 3 minutes. *Table 70* provides the total Dwell Time minutes for each Servicing Activity type along with the inbound trips and the average Dwell Times. **It is important to apply caution to the Utility Dwell Time average, as this has been highly skewed due to the identified Utility Servicing Activity that was taking place at the Porter's Edge development.** It should be noted that some vehicles undertaking Utility activity at Porter's Edge remained at the development for long periods, which increased the Utility Dwell Time average considerably *(see Table 66)*. On the day of the Porter's Edge survey, some renovation work was taking place at the development, and three Utility vehicles (two LGVs and one car) arrived at the development prior to 0800, all related to these works and all departing after 1600. Although the data has been checked and is confirmed as correct, caution has been applied in the presentation of these findings to highlight the anomaly, considering the low sample size of three developments surveyed in this study. It is recommended that readers examine the Dwell Times for each of the individual developments in Section 6 for greater context.

Servicing Activity	Total Dwell Minutes	Total Inbound Trips	Average Dwell Time
Utility	368	13	28
Fast Food	268	79	3
Supermarket & Groceries	57	15	4
Courier & Mail	127	46	3
Homeware	21	3	7
Waste & Recycling	13	1	13

Caution should be applied to the Utility average

Table 70: Average Dwell Times by Servicing Activity Types (All Developments)

APPENDIX A: Servicing Trips Percentages & Peaks

A1 This Appendix contains percentage split information for Servicing and Delivery trips for each of the individual developments, which are combined as summary tables comparing the developments together in *Table 54* in *6.5.7* and *Table 55* in *6.5.8*. The tables are provided in this Appendix so that the data can be studied easier for the individual developments.

A2 Tables for Canaletto Tower showing Servicing and Delivery trip percentage breakdowns by Servicing Activity types, which is further split by Servicing Vehicle types *(Technical Analysis item 11 in 5.3.1)*, are provided in *Table 71 and Table 72*. The percentages are also split further into either arrival periods or Dwell Time minute ranges, with the peak percentage in each Servicing Activity row highlighted in green.

CANALETTO TOWER 03/C TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND ARRIVAL TIME PERIOD							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER TIME PERIOD			
				06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	5.6%	CARS					
		LGV	100.0%	50.0%		50.0%	
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	52.8%	CARS					
		LGV					
		M/C	31.6%		7.9%	7.9%	15.8%
		OGV(1)					
		OGV(2)					
		P/C	68.4%	2.6%	10.5%	13.2%	42.1%
		CARGO BIKE					
SUPERMARKET & GROCERIES	15.3%	CARS	9.1%		9.1%		
		LGV	54.5%	18.2%	9.1%	18.2%	9.1%
		M/C	18.2%			9.1%	9.1%
		OGV(1)					
		OGV(2)					
		P/C	18.2%		9.1%		9.1%
		CARGO BIKE					
COURIER & MAIL	22.2%	CARS	18.8%	12.5%	6.3%		
		LGV	68.8%	18.8%	50.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE	12.5%		12.5%		
HOMEWARE	2.8%	CARS					
		LGV	100.0%		100.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	1.4%	CARS					
		LGV					
		M/C					
		OGV(1)	100.0%	100.0%			
		OGV(2)					
		P/C					
		CARGO BIKE					

Table 71: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types & Arrival Periods (Canaletto Tower)

CANALETTO TOWER 03/C TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND DWELL TIME RANGE							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER DWELL RANGE (MINUTES)			
				0 to 2	3 to 5	6 to 30	31 or more
UTILITY	5.6%	CARS					
		LGV	100.0%		50.0%	25.0%	25.0%
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	52.8%	CARS					
		LGV					
		M/C	31.6%	13.2%	18.4%		
		OGV(1)					
		OGV(2)					
		P/C	68.4%	5.3%	57.9%	5.3%	
		CARGO BIKE					
SUPERMARKET & GROCERIES	15.3%	CARS	9.1%		9.1%		
		LGV	54.5%	27.3%	18.2%	9.1%	
		M/C	18.2%		18.2%		
		OGV(1)					
		OGV(2)					
		P/C	18.2%		18.2%		
		CARGO BIKE					
COURIER & MAIL	22.2%	CARS	18.8%	18.8%			
		LGV	68.8%	43.8%	25.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE	12.5%	12.5%			
HOMEWARE	2.8%	CARS					
		LGV	100.0%		100.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	1.4%	CARS					
		LGV					
		M/C					
		OGV(1)				100.0%	
		OGV(2)	100.0%				
		P/C					
		CARGO BIKE					

Table 72: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Dwell Time Minute Ranges (Canaletto Tower)

A3 Tables for Porter's Edge showing Servicing and Delivery trip percentage breakdowns by Servicing Activity types, which is further split by Servicing Vehicle types *(Technical Analysis item 11 in 5.3.1),* are provided in *Table 73* and *Table 74*. The percentages are also split further into either arrival periods or Dwell Time minute ranges, with the peak percentage in each Servicing Activity row highlighted in green.

PORTER'S EDGE 03/C TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND ARRIVAL TIME PERIOD							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER TIME PERIOD			
				06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	11.3%	CARS	37.5%	12.5%	12.5%	12.5%	
		LGV	62.5%	50.0%	12.5%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	47.9%	CARS					
		LGV					
		M/C	58.8%		5.9%	11.8%	41.2%
		OGV(1)					
		OGV(2)					
		P/C	38.2%		14.7%	2.9%	20.6%
		CARGO BIKE	2.9%				2.9%
SUPERMARKET & GROCERIES	4.2%	CARS					
		LGV	100.0%	33.3%	33.3%		33.3%
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
COURIER & MAIL	35.2%	CARS	8.0%			8.0%	
		LGV	84.0%	4.0%	64.0%	16.0%	
		M/C	8.0%		4.0%	4.0%	
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
HOMEWARE	1.4%	CARS					
		LGV	100.0%			100.0%	
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					

Table 73: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Arrival Periods (Porter's Edge)

PORTER'S EDGE 03/C TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND DWELL TIME RANGE							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER DWELL RANGE (MINUTES)			
				0 to 2	3 to 5	6 to 30	31 or more
UTILITY	11.3%	CARS	37.5%			12.5%	25.0%
		LGV	62.5%		12.5%		50.0%
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	47.9%	CARS					
		LGV					
		M/C	58.8%	11.8%	44.1%	2.9%	
		OGV(1)					
		OGV(2)					
		P/C	38.2%	8.8%	29.4%		
		CARGO BIKE	2.9%		2.9%		
SUPERMARKET & GROCERIES	4.2%	CARS					
		LGV	100.0%	33.3%	66.7%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
COURIER & MAIL	35.2%	CARS	8.0%	4.0%	4.0%		
		LGV	84.0%	32.0%	36.0%	16.0%	
		M/C	8.0%	4.0%		4.0%	
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
HOMEWARE	1.4%	CARS					
		LGV	100.0%		100.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					

Table 74: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Dwell Time Minute Ranges (Porter's Edge)

A4 Tables for Bowl Court showing Servicing and Delivery trip percentage breakdowns by Servicing Activity types, which is further split by Servicing Vehicle types *(Technical Analysis item 11 in 5.3.1)*, are provided in *Table 75* and *Table 76*. The percentages are also split further into either arrival periods or Dwell Time minute ranges, with the peak percentage in each Servicing Activity row highlighted in green.

BOWL COURT 03/M TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND ARRIVAL TIME PERIOD							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER TIME PERIOD			
				06:00-10:00	10:00-14:00	14:00-18:00	18:00-22:00
UTILITY	7.1%	CARS					
		LGV	100.0%		100.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	50.0%	CARS					
		LGV					
		M/C	14.3%				14.3%
		OGV(1)					
		OGV(2)					
		P/C	85.7%				85.7%
		CARGO BIKE					
SUPERMARKET & GROCERIES	7.1%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C	100.0%			100.0%	
		CARGO BIKE					
COURIER & MAIL	35.7%	CARS	20.0%		20.0%		
		LGV	60.0%		60.0%		
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE	20.0%			20.0%	
HOMEWARE	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					

Table 75: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Arrival Periods (Bowl Court)

BOWL COURT 03/M TABLE OF % SERVICING ACTIVITY TYPE SPLIT BY MODE AND DWELL TIME RANGE							
SERVICING ACTIVITY TYPE	% OF TOTAL SERVICING TRIPS	SERVICING VEHICLE TYPE	% OF SERVICING ACTIVITY TYPE PER MODE	% OF SERVICING ACTIVITY TYPE BY MODE PER DWELL RANGE (MINUTES)			
				0 to 2	3 to 5	6 to 30	31 or more
UTILITY	7.1%	CARS					
		LGV	100.0%			100.0%	
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
FAST FOOD	50.0%	CARS					
		LGV					
		M/C	14.3%		14.3%		
		OGV(1)					
		OGV(2)					
		P/C	85.7%	42.9%	28.6%	14.3%	
		CARGO BIKE					
SUPERMARKET & GROCERIES	7.1%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C	100.0%		100.0%		
		CARGO BIKE					
COURIER & MAIL	35.7%	CARS	20.0%		20.0%		
		LGV	60.0%	20.0%	20.0%	20.0%	
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE	20.0%		20.0%		
HOMEWARE	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					
WASTE & RECYCLING	0.0%	CARS					
		LGV					
		M/C					
		OGV(1)					
		OGV(2)					
		P/C					
		CARGO BIKE					

Table 76: Servicing & Delivery Trip Percentage Breakdowns by Servicing Activity Types, Servicing Vehicle Types and Dwell Time Minute Ranges (Bowl Court)

Appendix I

E-scooter study

ARUP

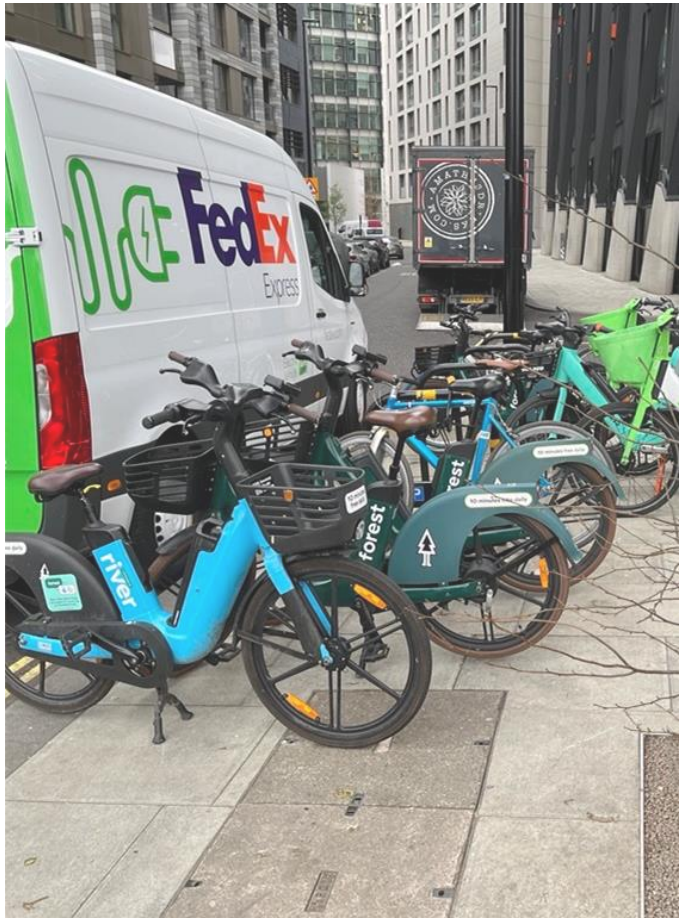
Baltic Wharf - Paddington

E-bikes/ e-scooters demand forecast

15 January 2025

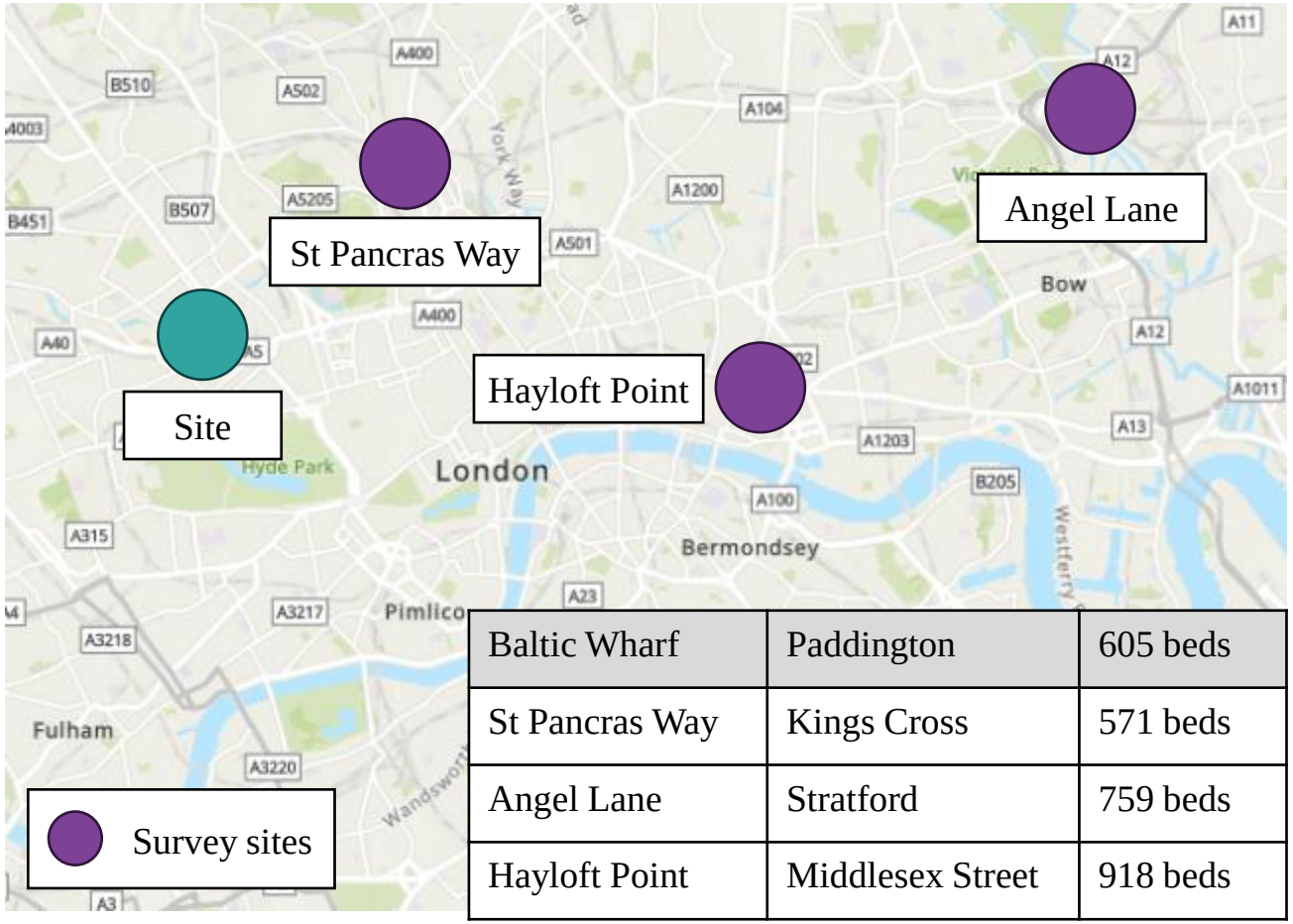
Overview and key findings

PBSA (as an origin land use) could help to balance out e-mobility demand generated by surrounding destinations land uses



- Arup on behalf of Unite Students has undertaken a study of e-mobility (e-bike and e-scooter) demand associated with purpose-built student accommodation (PBSA).
- This study provides an evidence basis for forecasting future e-mobility demand associated with the proposed redevelopment of the Baltic Wharf, Paddington site.
- Surveys of Unite-owned PBSAs were conducted on 19 Oct 2023 and 20 Oct 2023 between 6.30am and 00.30am. Survey footage has been reviewed to provide the evidence base for the demand generated by the PBSAs. This slide deck provides an overview of the surveyed quantum of e-mobility parked outside the PBSA. For each location, the maximum number of e-mobility parked has been captured.
- The deck then establishes a demand rate per bed space at each site, in order to provide the basis of forecast demand for the Baltic Wharf scheme.
- The figures represent parked e-mobility rather that usage levels. There is turnover throughout the day as students commute to and from their accommodation.
- As an origin land-use, PBSA could help to balance out demand generated by the existing destination land uses in the surrounding area, i.e. offices / school. Students would create a daytime demand for e-mobility (removing and using some of the existing parked e-mobility) – reducing the accumulation of parking within the local area.

Survey site locations



Baltic Wharf	Paddington	605 beds
St Pancras Way	Kings Cross	571 beds
Angel Lane	Stratford	759 beds
Hayloft Point	Middlesex Street	918 beds

- The Unite PBSA sites indicated by the adjacent diagram have been studied, with the number of bed places tabulated below.
- The following slides shows the nature of parking arrangement associated with each site and occupation levels at the time of the survey.
- The point of view of the street adjacent to the building entrance is provided, i.e. demonstrating where parking of e-mobility is experienced for each site. This is either within an unregulated or regulated zone.

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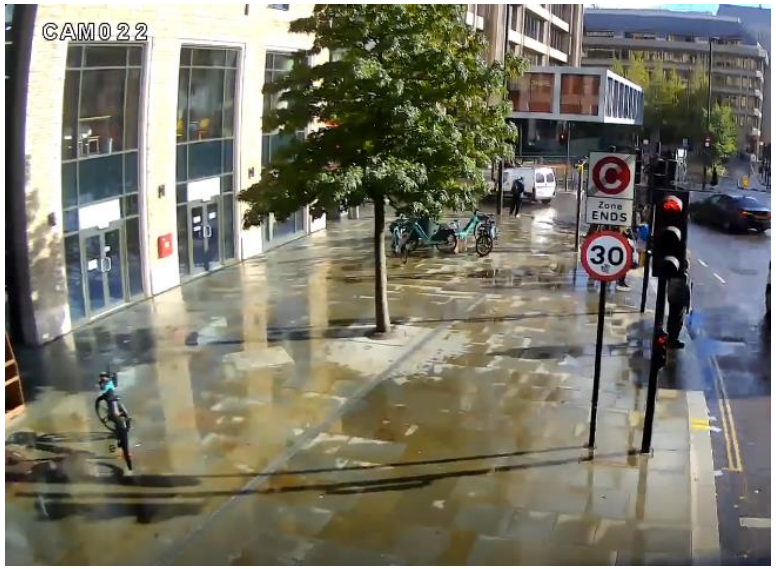
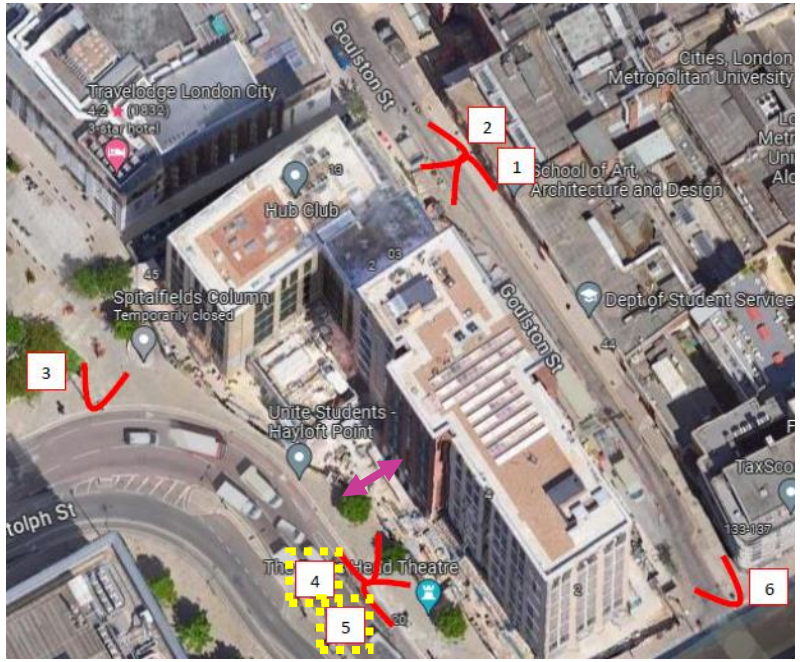
Hayloft Point, Aldgate – LB Tower Hamlets

Occupied bedspaces at time of survey	**918**
Mandatory e-mobility parking areas?	No

Camera 4

Camera 5





Map showing Unite Students Hayloft Point site and camera views. Cameras analysed highlighted in yellow.

↔ Site entrance

St Pancras Way - LB of Camden

Occupied bedspaces at time of survey	**571**
Mandatory e-mobility parking areas?	Yes

Camera 1

Map showing Unite Students St Pancras Way site and camera views.
Camera analysed highlighted in yellow.

Site entrance

Mandatory e-bike/e-scooter parking area

Angel Lane, Stratford - LB of Newham

Occupied bedspaces at time of survey	**759**
Mandatory e-mobility parking areas?	No

Camera 2

Map showing Unite Students Angel Lane site and camera views.
Camera analysed highlighted in yellow.
↔ Site entrance

Assessment

- The parking demand is provided in the following slides, with a summary of the minimum and maximum indicated for each site, across the two survey days detailed below.
- A parking demand rate per bed place has been established for each site, assuming all parking is associated with the PBSA accommodation (which may not necessarily be the case) for robustness of approach.
- As demonstrated, there is consistency of demand across the two sites that experienced e-mobility parking adjacent to the PBSAs.

Summary demand

	Max e-mobility (Day 1 and 2)	Range (e-mobility) – across day 1 and 2
Hayloft Point	11	8 to 11
St Pancras Way	8	3 to 8
Angel Lane	0	0

Demand rates per bed place

	Max (e-mobility parking rate per bed place)	Range (e-mobility parking rate per bed place)
Hayloft Point	0.01	0.009 to 0.01
St Pancras Way	0.01	0.005 to 0.01
Angel Lane	0	0

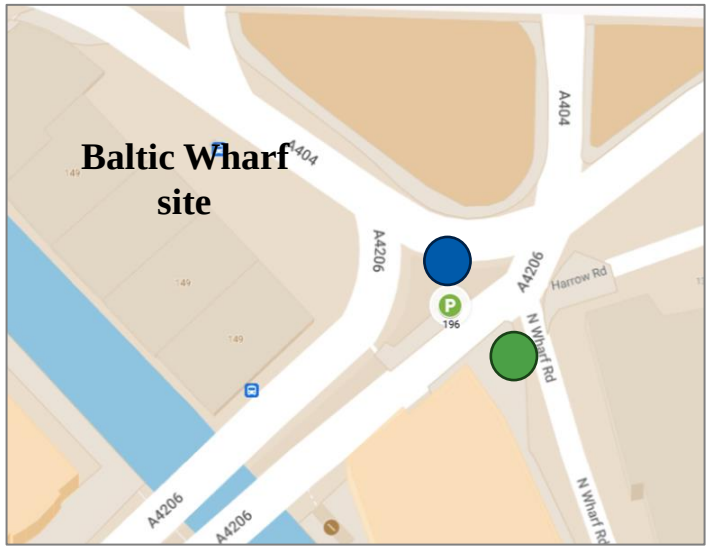
Forecast demand

- When applying the demand rates per bed place to the Baltic Wharf scheme, between three and six e-bikes / e-scooters are forecast to be generated, i.e. a low level of parking demand. It should be noted that this is forecasting demand for parking, rather than e-mobility usage, which may be higher. Based on existing observed proportions, one to two would be e-scooters, which would occupy a smaller footprint.

Forecast demand (based on 605no. application scheme bed places)

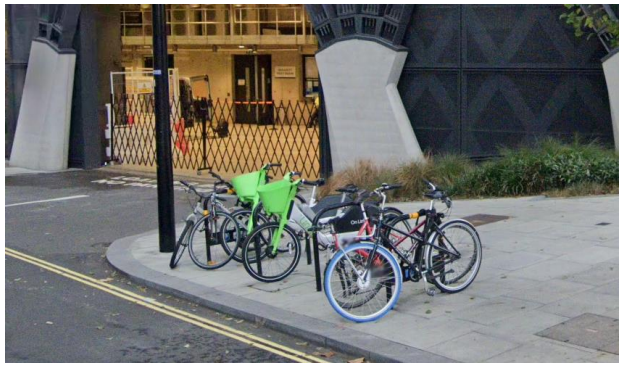
	Max	Range
Based on Hayloft Point	6	5 to 6
Based on St Pancras Way	6	3 to 6
Based on Angel Lane	0	0

- Westminster City Council regulates the location of e-mobility within Westminster, with the map extract below demonstrating the location of e-mobility parking zones in the vicinity of the Baltic Wharf site. These sites would see a low level of increased demand as a result of the application.



Key

- E-mobility parking zone located in a pedestrian island (location 1)
- Cycle parking provided by Sheffield stands on footway (observed to be used by e-bikes) – refer to image on the right (location 2)



Local E-mobility parking demand

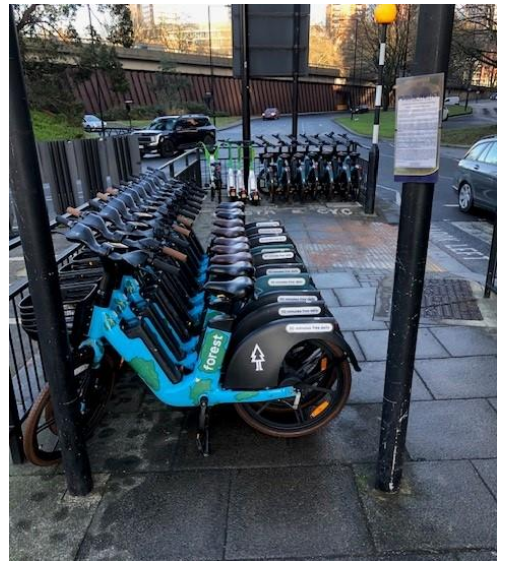
Location 1 – Bishops Bridge Road Island	8 AM	10 AM	12 NN	2 PM	4 PM	6 PM	8 PM
E-bikes	13	19	19	19	20	16	12
E-scooters	5	4	3	3	3	2	2

Capacity: up to 19 e-bikes and 3 e-scooters

Location 2 – North Wharf Road Corner	8AM	10 AM	12 NN	2 PM	4 PM	6 PM	8 PM
E-bikes	11	18	8	7	7	2	0
E-scooters	4	3	3	3	3	4	3

Capacity: up to 10-15 e-bikes and 2-5 e-scooters

- E-mobility parking levels have been surveyed on 14 January 2025 to understand the level of parking demand adjacent to the application site during the day. These locations are illustrated on the previous slide, with an indication of demand versus capacity shown above.
- The current observations indicate that while parking spaces for e-mobility appear to be at or close to capacity during the day, the forecast of up to ~6 e-bikes may not necessarily result in further accumulation of e-mobility.
- It is noted that the e-mobility parking builds during the day and reduces towards the end of the day, likely due to the surrounding destination type land-uses i.e. schools and offices.
- Given the nature of the PBSA land-use (i.e. would create trip origins rather than being a trip destination), increased daytime demand from students could lead to e-mobility being removed during the day rather than adding additional parking demand.
- This would help to balance the day-time demand generated by destination type land-uses, e.g. the local offices and school.
- This dynamic turnover helps balance parking accumulation, as e-mobility is used and removed during the day by future student occupiers.
- The PBSA may create overnight demand which would be accommodated within the current observed spare capacity.



Location 1 (12nn)

Location 2 (8am)

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Hayloft Point, Aldgate – LB Tower Hamlets

Observed max and number of e-bikes – Camera 4 and 5

Time	Max number of e-bikes
0630	8
0730	8
0830	8
0930	9
1030	8
1130	10
1230	10
1330	9
1430	9
1530	9
1630	10
1730	8
1830	10
1930	11
2030	11
2130	10
2230	10
2330	10
0030	8
Daily maximum	**11**

Survey day 1

Time	# E-Bikes
0630	8
0730	8
0830	7
0930	8
1030	7
1130	7
1230	7
1330	7
1430	9
1530	9
1630	8
1730	6
1830	5
1930	6
2030	6
2130	7
2230	7
2330	7
0030	8

Survey day 2

Time	# E-Bikes
0630	8
0730	8
0830	8
0930	9
1030	8
1130	10
1230	10
1330	9
1430	8
1530	9
1630	10
1730	8
1830	10
1930	11
2030	11
2130	10
2230	10
2330	8
0030	8

St Pancras Way, LB of Camden

Observed max and number of e-bikes and e-scooters – Camera 1

Time	Max number of e-bikes	Max number of e-scooters
0630	3	4
0730	3	3
0830	4	3
0930	3	5
1030	1	6
1130	0	5
1230	1	6
1330	0	5
1430	1	5
1530	1	6
1630	3	3
1730	5	3
1830	4	3
1930	4	3
2030	3	3
2130	4	3
2230	5	3
2330	5	3
0030	5	3
Daily maximum	**5**	**6**

Survey day 1

Time	# E-Bikes	# E-Scooters
0630	3	4
0730	3	3
0830	4	3
0930	3	5
1030	0	6
1130	0	5
1230	0	6
1330	0	5
1430	1	5
1530	1	6
1630	1	3
1730	1	3
1830	2	2
1930	2	2
2030	3	2
2130	4	2
2230	3	2
2330	4	2
0030	4	2

Survey day 2

Time	# E-Bikes	# E-Scooters
0630	3	2
0730	3	2
0830	3	2
0930	1	2
1030	1	3
1130	0	4
1230	1	4
1330	0	3
1430	1	3
1530	1	2
1630	3	2
1730	5	2
1830	4	3
1930	4	3
2030	3	3
2130	3	3
2230	5	3
2330	5	3
0030	5	3

Angel Lane, Stratford, LB of Newham

Observed max and number of e-bikes – Camera 2

Time	Max number of e-bikes
0630	0
0730	0
0830	0
0930	0
1030	0
1130	0
1230	0
1330	0
1430	0
1530	0
1630	0
1730	0
1830	0
1930	0
2030	0
2130	0
2230	0
2330	0
0030	0

Survey day 1

Time	# E-Bikes
0630	0
0730	0
0830	0
0930	0
1030	0
1130	0
1230	0
1330	0
1430	0
1530	0
1630	0
1730	0
1830	0
1930	0
2030	0
2130	0
2230	0
2330	0
0030	0

Survey day 2

Time	# E-Bikes
0630	0
0730	0
0830	0
0930	0
1030	0
1130	0
1230	0
1330	0
1430	0
1530	0
1630	0
1730	0
1830	0
1930	0
2030	0
2130	0
2230	0
2330	0
0030	0

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