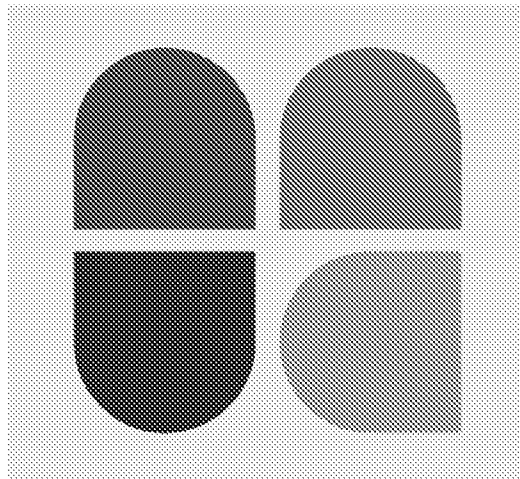




B R I G H T P L A N

WATERLOO SQUARE, BOGNOR REGIS

MIXED-USE DEVELOPMENT

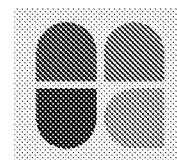
Transport Statement

Prepared on Behalf of

B5 Ltd

BROK/20/6153

May 2020



DOCUMENT CONTROL

Project: Waterloo Square, Bognor Regis
Mixed-Use Development

Document: Transport Statement

Client: B5 Ltd

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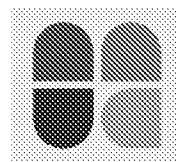
Date: 27/02/2020

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Issue	Date	Status	Issued by
1.	27/02/2020	Draft	EJD
2.	06/03/2020	Final	EJD
3.	28/05/2020	Draft 02	ALB
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5.			
6.			

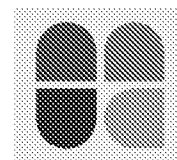
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PLANS

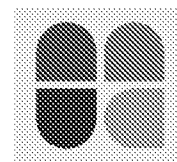
Plan 01 Accessibility Plan

DRAWINGS

- 001** Access Overview and Swept Path Analysis
- 002** Servicing Vehicle Swept Path Analysis
- 003** Car Parking Swept Path Analysis

APPENDICES

- Appendix A** WSCC Highways Consultation Response 03/12/19
- Appendix B** Site Layout
- Appendix C** Stage 1 Road Safety Audit
- Appendix D** TRICS Output - Flats
- Appendix E** TRICS Output - Restaurant
- Appendix F** TRICS Output - Retail



1 INTRODUCTION

- 1.1.1 This Transport Statement (TS) has been prepared by Bright Plan on behalf of B5 Ltd to support a planning application for a mixed residential/commercial development at Waterloo Square, Bognor Regis. The proposed development would involve the construction of 35 apartments, and 3 retail units. The application site is situated east of Waterloo Square as shown in **Figure 1.1**.



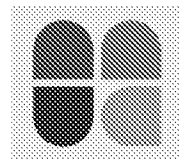
Figure 1.1: Application Site Location

1.2 Planning History

- 1.2.1 This TS considers an amendment to planning application BR/282/19/PL which previously proposed the development of 49 dwellings and 2 flexible use commercial units.
- 1.2.2 The revised application received comments from West Sussex County Council (WSCC) on the 27th April 2020 which are attached at **Appendix A**. The consultation response requested the following information:
- Updated RSA to assess alterations to access arrangements including access to parking and loading bay arrangements.
 - Swept path tracking diagrams to fully demonstrate workability of proposed parking spaces and loading bay including wider access from High Street/West Street for anticipated vehicles (refuse/deliveries).
 - Trip generation – amended assessment of the anticipated vehicular trip generation from both residential and commercial element.

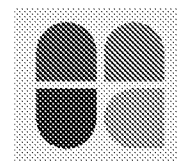
1.3 Scope of Transport Statement

- 1.3.1 This TS outlines the key transport planning matters in accordance with national, regional and local guidance, reviewing the site's accessibility, relevant planning history and context, the proposed development layout, access arrangements, servicing arrangements, car and cycle parking requirements and the proposed traffic impact on the local road network.



1.3.2 The remainder of this report comprises the following sections:

- i. **Section 2** sets out the transport conditions in the local area and highway network, and provides a review of highway safety;
- ii. **Section 3** provides an assessment of the site's access and internal layout design, parking provision, servicing arrangements, and the anticipated traffic impact on the local road network;
- iii. **Section 4** provides an assessment of the anticipated traffic impact resulting from the development supported by a trip generation assessment;
- iv. **Section 5** provides a summary of the TS conclusions.



2 BASELINE CONDITIONS

2.1 Site Location and Description

- 2.1.1 The site previously accommodated a range of site uses including 5 residential flats, restaurant/café, retail units, an amusement arcade, and nightclub, which were demolished following a serious fire in 2016. The site is bordered by adjacent commercial/residential properties to the north, Norfolk Street to the east, The Esplanade to the south, and Waterloo Square to the west. The site context is demonstrated in **Figure 2.1**.



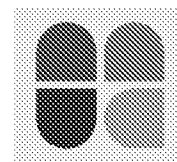
Figure 2.1: Aerial View of Site Location

2.2 Local Road Network

- 2.2.1 Waterloo Square runs along the site's western boundary and comprises a c.8m wide two-way carriageway flanked by footways on either side. Waterloo Square provides a series of marked pay and display/permit holder parking bays on both sides of the carriageway, interspersed with double and single yellow lines. Waterloo Square's highway features are shown in **Figure 2.2**.



Figure 2.2: Waterloo Square Heading North



- 2.2.2 Norfolk Street runs along the site's eastern boundary, providing access to the rear of the site. The road has a one-way operation (north to south) and has a variable carriageway/footway width (c.3m wide carriageway adjacent to the site). Parking is restricted on Norfolk Street, enforced by double yellow lines. Norfolk Street's highway features are shown in **Figure 2.3**.



Figure 2.3: Norfolk Street Heading South

2.3 Wider Highway Network

- 2.3.1 The A29 is situated c.1.2km to the north of the site and can be accessed via the B2166. The A29 runs north from Bognor Regis providing a connection to both the A259 and A27. The A259 facilitates access locally to Chichester to the west and Littlehampton to the east. The A27 runs east to west facilitating access locally to Worthing and Brighton. The site's location in the context of the wider highway network is shown in **Figure 2.4**.

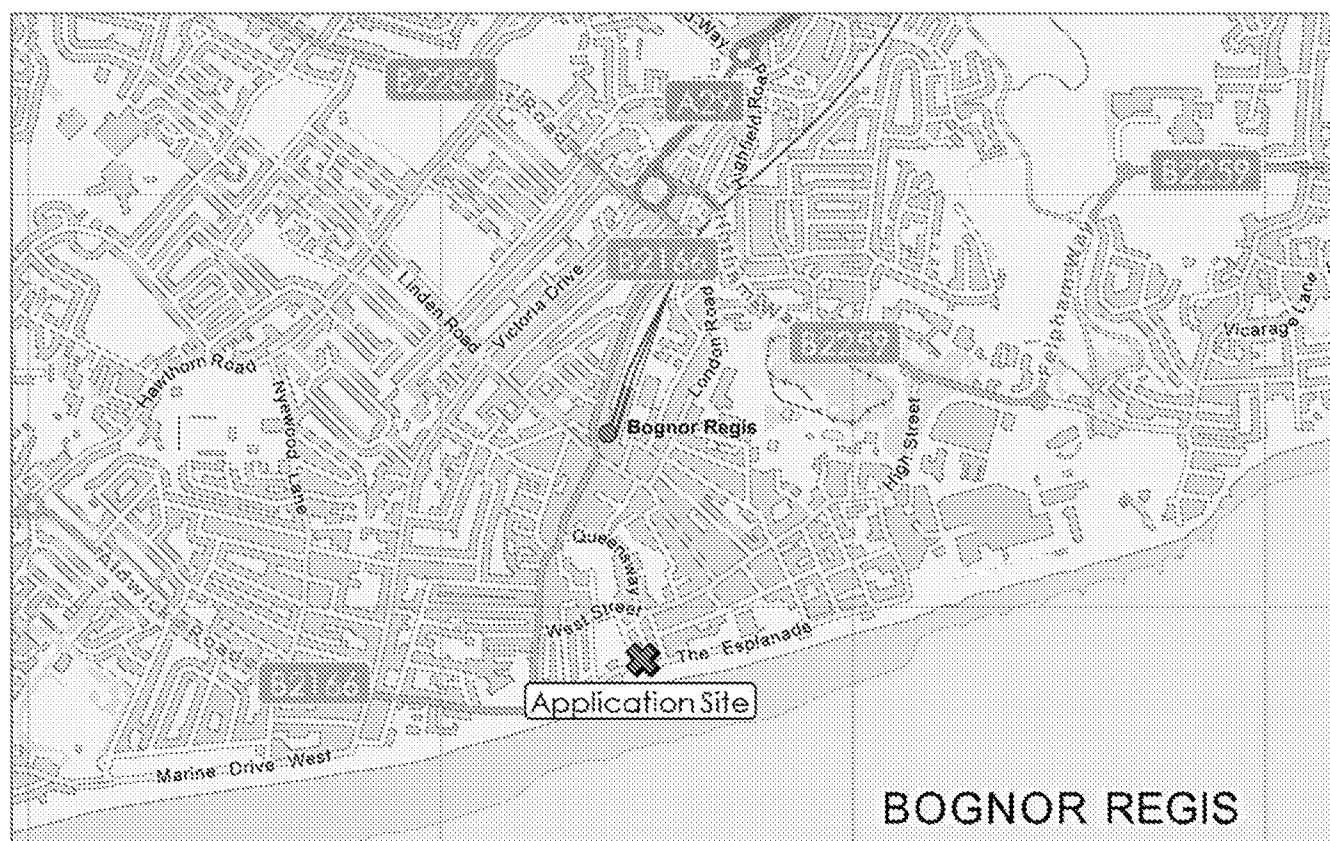
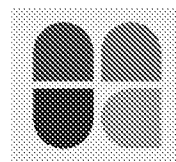


Figure 2.4: Wider Highway Network



2.4 Accessibility Credentials

Pedestrian Accessibility

- 2.4.1 Waterloo Square and The Esplanade provide pedestrian footways on either side of their carriageways and are supported by crossing facilities including uncontrolled crossings and a signalised crossing in the immediate vicinity of the site. The footways connect with the local footway network facilitating pedestrian movement through Bognor Regis. The existing pedestrian infrastructure in the vicinity of the site is shown in **Figure 2.5**.



Footway Flanking Waterloo Square



Signalised Crossing on The Esplanade

Figure 2.5: Pedestrian Infrastructure in the Vicinity of the Site

- 2.4.2 The Chartered Institute of Highways and Transportation's (CIHT) publication 'Providing for Journeys on Foot' (2000) states that the average length of a journey on foot is 1km. It further recommends a preferred maximum walking distance of 2km for commuting journeys. As shown on **Plan 01**, a wide range of local services and amenities, including local bus stops, are situated within 1km of the application site and are therefore accessible on foot.

Cycle Accessibility

- 2.4.3 The National Cycle Route (NCR) no.2 runs along Bognor Regis promenade facilitating cycle access along the coast to Felpham and Flansham and on to Littlehampton. The NCR no.2 connects with the South Coast Cycle Route (SCCR) c.1km to the west of the site, facilitating cycle journeys to the western area of Bognor Regis. In addition, a local cycle route is provided between Bognor Regis and Chichester along the A259 corridor. The local cycle route network is shown on **Plan 01** and **Figure 2.6**.

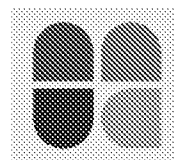


Figure 2.6: Cycle Routes in the Vicinity of the Site

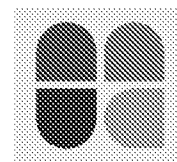
- 2.4.4 The CIHT's publication 'Cycle Friendly Infrastructure' (1996), suggests that reasonably fit individuals can comfortably cycle a distance of 8km to workplace destinations. The full extent of Bognor Regis is therefore accessible from the site by cycle.

Accessibility by Bus

- 2.4.5 The 'West Street' bus stop is situated on Waterloo Square c.160m north of the site, and the High Street bus stops (A – D) are situated within Bognor Regis town centre c.180m to the northeast of the site. The stops provide services to a range of local destinations including Chichester and Littlehampton, as well as a National Express service to London. A summary of the available services is provided in **Figure 2.6**.

Service No.	Route Summary	Typical Frequency	Operating Hours
600	Elmer - Bognor Regis - Chichester	Mon-Sat: 1 every 5 – 20min Sun: 1 every hour	Mon-Sat: 06:05 – 21:25 Sun: 08:05 – 18:05
700 Coastliner	Littlehampton - Bognor Regis - Chichester	Mon-Sat: 1 every 20min Sun: 1 every 30min	Mon-Fri: 05:44 – 00:12 Sat: 06:26 – 00:12 Sun: 07:44 – 00:12
Star	Bognor Regis - South and North Bersted - Bognor Regis	Mon-Sat: 1 every 30min	Mon-Fri: 07:41 – 17:41 Sat: 07:56 – 17:56
U7	Bognor Regis Hotham Park - Chichester University - Chichester	Mon-Fri: 1 every 1hr 30min	Mon-Fri: 07:09 – 23:43
66A / 66C	Bognor Regis - Yapton - Bognor Regis	Mon-Sat: 1 every 2 hours	Mon-Sat: 08:15 – 17:40
026	Bognor Regis – London	Mon-Sun: 1 per day	Mon-Fri: 07:35 Sat-Sun: 09:10
61	North Bersted - South Bersted - Bognor Regis - Aldwick (Circular)	Mon-Sat: 3 per day	Mon-Sat: 09:53 – 13:53
62	North Bersted - South Bersted - Bognor Regis - Aldwick - Nyetimber (Circular)	Mon-Sat: 2 per day	Mon-Sat: 10:53 – 12:53
67	Bognor Regis - North Felpham - Glenwood Estate - Bognor Regis	Mon-Sat: 1 every 2 hours	Mon-Sat: 09:50 – 16:10
69	Wick - Littlehampton - Bognor Regis - Barfoots of Botley	Mon-Sat: 2 per day	Mon-Sun: 05:00 – 16:00

Figure 2.6: Services Available from Local Bus Stops



Accessibility by Train

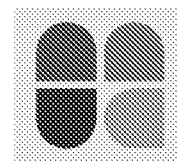
- 2.4.6 Bognor Regis railway station is situated c.500m to the north of the site and is accessible on foot or by cycle. The station provides regular services to a range of locations including Barnham, Littlehampton, Chichester, Horsham and London Victoria. A summary of services available is provided in **Figure 2.7**.

Destination	Route Summary	Typical Journey Time	Typical Frequency
Barnham	Bognor Regis – Barnham	6 – 7 minutes	4 every hour
Littlehampton	Bognor Regis – Barnham – Littlehampton	18 – 24 minutes	2 every hour
Chichester (change at Barnham)	Bognor Regis – Barnham – Chichester	17 – 31 minutes	4 every hour
Horsham	Bognor Regis – Barnham – Billingshurst – Horsham	40 – 45 minutes	4 every hour
London Victoria	Bognor Regis – Barnham – Billingshurst – Horsham – Crawley – Clapham Junction – London Victoria	1hr 35min – 1hr 45 min	3 every hour

Figure 2.7: Services Available from Bognor Regis Railway Station

2.5 Accident Data

- 2.5.1 WSCC reviewed the local accident record in preparation of their consultation response concluding: *"There is no evidence to suggest that the nearby road layout is operating unsafely"*.



3 PROPOSED DEVELOPMENT

3.1 Overview

3.1.1 The proposed development would comprise 35 apartments and 3 retail units. The proposed layout is attached at **Appendix B** and the proposed accommodation schedule is provided in **Figure 3.1**.

Land Use	Unit Type	No. of Units / GFA
Residential	1 Bedroom Apartment	12
	2 Bedroom Apartment	23
	Total	35 Apartments
Commercial	Retail Unit 1	78 sqm
	Retail Unit 2	40 sqm
	Retail Unit 3	225 sqm
	Total	343sqm

Figure 3.1: Accommodation Schedule

3.2 Vehicle Access

3.2.1 Vehicle access to the site would be provided for staff and service vehicles only. A service area would adjoin Norfolk Street, providing perpendicular car parking spaces accessed directly from the carriageway and sufficient room for service vehicles to wait parallel to the carriageway in the service area without obstructing Norfolk Street's operation. The proposed servicing area is demonstrated in **Figure 3.2**.

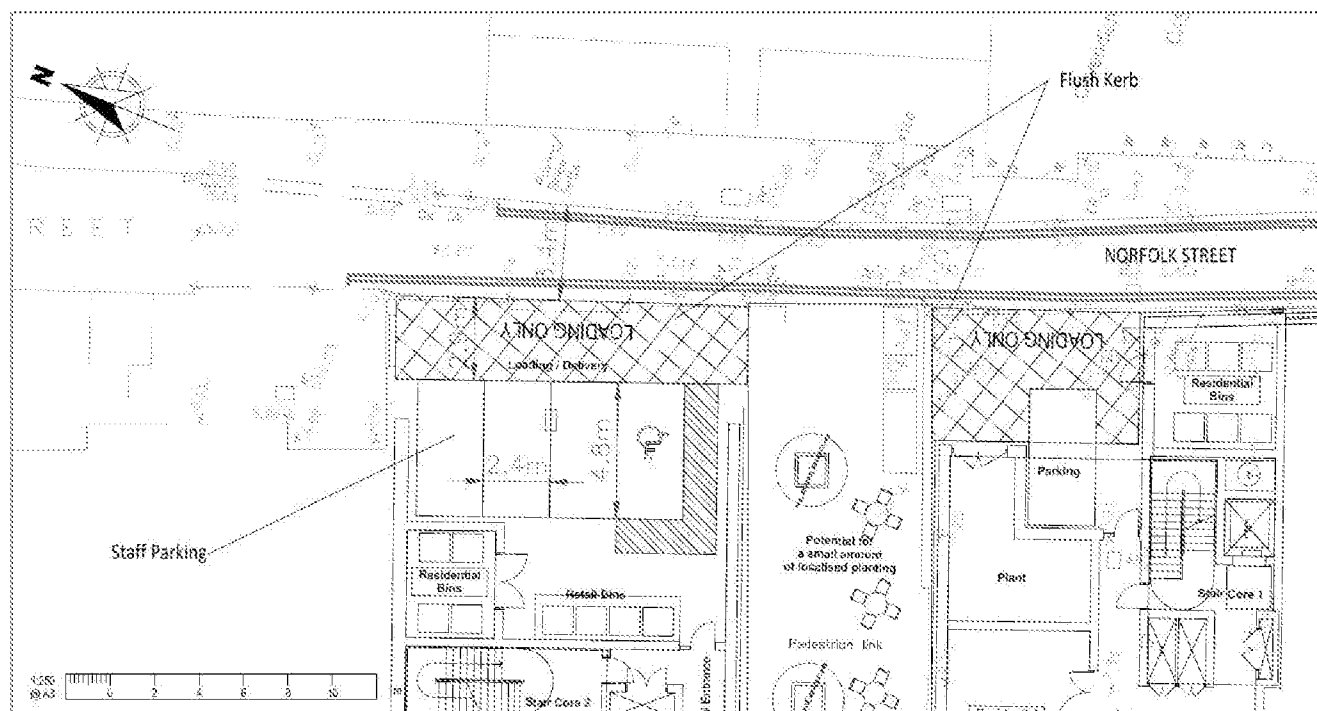
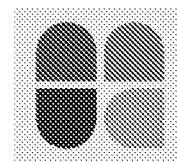


Figure 3.2: Proposed Servicing Area



- 3.2.2 A vehicle swept path analysis has been undertaken to demonstrating that the car parking spaces and loading area are operational in **Drawings 2020.6153.001, 2020.6153.002 and 2020.6153.003**. The assessment includes demonstration that anticipated service vehicles can negotiate Norfolk Street from its junction with High Street and the Esplanade, and access / egress the service area.

3.3 Stage 1 Road Safety Audit

- 3.3.1 The site has been subject to a Stage 1 Road Safety Audit (RSA) undertaken by Road Safety Answers on 28th May 2020. The audit identified 1 problem with the proposed access arrangement, which was accepted, and the recommendations incorporated into the proposed design. A copy of the Stage 1 RSA including the design team response is attached at **Appendix C**.

3.4 Pedestrian Access

- 3.4.1 Pedestrian access to the site would be served from a series of direct access points connecting to existing footways on Waterloo Square and Norfolk Street.

3.5 Emergency Access

- 3.5.1 The proposed apartment block would be fitted with a dry rising main accessible from the site perimeter. The dry rising main would be accessible within 18.0m of a pump appliance without requiring reversing manoeuvres greater than 20m in accordance with Building Regulations Part B.

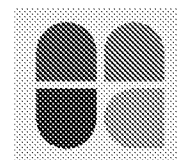
3.6 Servicing Arrangements

- 3.6.1 Deliveries to the site would be undertaken the service area adjoining Norfolk Street to the rear of the site. A vehicle swept path analysis has been undertaken demonstrating a delivery vehicle utilising the service area in **Drawing 2020.6153.002**.
- 3.6.2 Refuse collection would also be undertaken to the rear of the site via Norfolk Street as per the previous arrangement for the site and the arrangements for neighbouring properties.

3.7 Parking Provision

Vehicle Parking

- 3.7.1 The proposed development would provide 5 car parking space which would serve site staff only. The parking requirements for residents and retail customers would therefore be accommodated on the local road network. As previously identified, the site had recently accommodated 5 dwellings, a 620sqm of restaurant and 90sqm of retail units. This previous use did not provide on-site car parking and all parking demand was accommodated on-street and in local car parks.
- 3.7.2 A comparison has been drawn between the previous and proposed land uses to determine the change in parking demand placed on the local road network in **Figure 3.3**. The demand has been calculated using ADC's Parking Standards Supplementary Planning Document (2020). The comparison demonstrates that there would be a net reduction in parking demand on the local road network.



Previous Use	ADC Parking Standard	ADC Parking Requirements
5 Dwellings	1 space per 1 bed dwelling & 1 space per 2 bed dwelling	5
90sqm A1 retail	1 Space per 14sqm	6.4
620sqm Restaurant (50% public area)	1 space per 5sqm of public area and 2 spaces per bar	62
Total: -		73.4

Proposed Use	ADC Parking Standard	ADC Parking Requirements
35 Dwellings	1 space per 1 bed dwelling & 1 space per 2 bed dwelling	35
355sqm A1 retail	1 Space per 14sqm	25.4
Total: -		60.4

Net Change: -		-13.0
----------------------	--	--------------

Figure 3.3: Car Parking Provision

3.7.3 It is unlikely that the demand identified in Figure 3.3 would occur the site's highly accessible location, allows future residents to use sustainable travel modes such as walking, cycling, bus or rail when travelling to local services, amenities and employment centre. The surrounding network is also subject to CPZ which would control parking demand associated with the site.

3.7.4 The accessibility of the site and CPZ implications are recognised by WSCC in their consultation response which states the following: -

"the LHA acknowledge the accessible location in terms of options for sustainable transport and proximity to amenities meaning that a reliance on the private car would not wholly be necessary for all residents. Furthermore, the surrounding area is a Controlled Parking Zone (CPZ) and thus overspill parking nearby on-street is not anticipated to take place in locations that would be deemed detrimental to highway safety"

3.7.5 It is also notable that the majority of trips to the retail element of the proposal would be pass-by / linked trips associated with existing retail and tourist amenities on Bognor Regis seafront. Consequently, the number of trips that are new to the local road network and the associated parking demand would be lower than that identified in **Figure 3.3**.

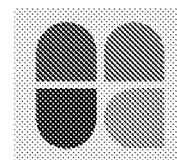
Cycle Parking

3.7.6 Cycle parking would be providing in line with Arun District Council's cycle parking standards as set out in the council's 'Parking Standards Supplementary Planning Document' (January 2020). A summary of the standards and proposed provision is provided in **Figure 3.4**.

Land Use	No. of Units / GFA	Cycle Parking Standard	Spaces Required	Spaces Proposed
Flats	35	1 per unit (communal)	35	36
Retail units	343sqm	1 space per 4 staff and 1 space per 25sqm for customers	6 staff spaces and 14 visitor spaces	4 staff spaces and 8 visitor spaces

Figure 3.4: Cycle Parking Provision

3.7.7 Cycle parking for residents of the apartments and staff of the retail units would be provided within a communal cycle store. Visitor parking would take place on Sheffield stands located to the front of the building.



4 TRIP GENERATION AND TRAFFIC IMPACT

4.1 Overview

- 4.1.1 To assess the traffic impact of the proposals, the TRICS database (version 7.6.4) has been interrogated to anticipate the likely traffic volumes generated by the permitted site uses and the proposed development. The trip rates have then been compared to establish the net vehicle trip generation resulting from the development.

4.2 Previous Site

- 4.2.1 The previous site recently accommodated restaurant / takeaways, retail units, a nightclub, and residential units. To establish the overall traffic generation associated with the site, each land use has been assessed separately before being summed to provide an overall traffic generation. The previous nightclub would generate movements predominantly outside of peak traffic hours, and as such is not included within this assessment.

Flats

- 4.2.2 The previous site included 5 flats on the first floor of 2-4 Waterloo Square. To determine the number of vehicle movements associated with these flats, the parameters identified in **Figure 4.1** have been used to filter the TRICS database.

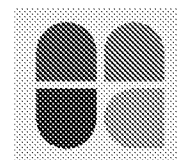
TRICS Version 7.6.4	
Filtering Parameter:	Criteria Selected:
i. Land use	Residential – Flats (Privately Owned)
ii. Regions	England (excluding Greater London)
iii. Number of Units	6 to 100
iv. Date Range	01/01/11 to 13/11/18
v. Count Type	Manual
vi. Selected Days	Weekdays
vii. Selected Locations	• Edge of Town Centre • Suburban Area

Figure 4.1: TRICS Filtering Parameters – Flats

- 4.2.3 The TRICS output is provided at **Appendix D**, whilst a summary of the weekday peak hour and daily trip rates, along with the subsequent vehicle movements associated with the flats is provided in **Figure 4.2**.

TRICS Trip Rate per Flat			
	Arrivals	Departures	Two-Way
AM Peak Hour	0.063	0.222	0.285
PM Peak Hour	0.218	0.098	0.316
Daily	1.414	1.431	2.845
TRICS Vehicle Trip Generation – 5 Flats			
AM Peak Hour	0	1	1
PM Peak Hour	1	1	2
Daily	7	7	14

Figure 4.2: Previous Trip Generation – Flats



Restaurants

- 4.2.4 The previous site included a c.138sqm restaurant on the ground floor of the former Beach Hotel site, as well as 2 restaurants with floor areas of 155sqm and 327sqm on the ground floor of 2-4 Waterloo Square. The site therefore accommodated a total of 620sqm. To determine the number of vehicle movements associated with these restaurants, the parameters identified in **Figure 4.3** have been used to filter the TRICS database.

TRICS Version 7.6.4	
Filtering Parameter:	Criteria Selected:
i. Land use	Hotel, Food & Drink – Restaurant
ii. Regions	England (excluding Greater London)
iii. Gross Floor Area	200 to 1000 sqm
iv. Date Range	01/01/11 to 12/07/18
v. Count Type	Manual
vi. Selected Days	Weekdays
vii. Selected Locations	• Edge of Town Centre • Suburban Area

Figure 4.3: TRICS Filtering Parameters – Restaurants

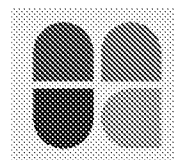
- 4.2.5 The TRICS output is provided at **Appendix E**, whilst a summary of the weekday peak hour and daily trip rates, along with the subsequent vehicle movements associated with the restaurants is provided in **Figure 4.4**.

TRICS Trip Rate per 100sqm			
	Arrivals	Departures	Two-Way
AM Peak Hour	0.000	0.000	0.000
PM Peak Hour	1.684	0.912	2.596
Daily	21.901	22.800	44.701
TRICS Vehicle Trip Generation – 620sqm			
AM Peak Hour	0	0	0
PM Peak Hour	10	6	16
Daily	136	141	277

Figure 4.4: Previous Trip Generation – Restaurants

Retail

- 4.2.6 The previous site included 2 retail units on the ground floor of the former Beach Hotel site with a total floor area of c.90sqm. To determine the number of vehicle movements associated with these units, the parameters identified in **Figure 4.5** have been used to filter the TRICS database.



TRICS Version 7.6.4	
Filtering Parameter:	Criteria Selected:
i. Land use	Shopping Centre – Local Shops
ii. Regions	England (excluding Greater London)
iii. Gross Floor Area	210 to 500 sqm
iv. Date Range	01/01/11 to 08/07/16
v. Count Type	Manual
vi. Selected Days	Weekdays
vii. Selected Locations	- Suburban Area - Edge of Town

Figure 4.5: TRICS Filtering Parameters – Retail Units

4.2.7 The TRICS output is provided at **Appendix F**, whilst a summary of the weekday peak hour and daily trip rates, along with the subsequent vehicle movements associated with the retail units is provided in **Figure 4.6**.

TRICS Trip Rate per 100sqm			
	Arrivals	Departures	Two-Way
AM Peak Hour	6.065	5.591	11.656
PM Peak Hour	6.452	6.624	13.076
Daily	87.108	87.338	174.446
TRICS Vehicle Trip Generation – 90sqm			
AM Peak Hour	5	5	10
PM Peak Hour	6	6	12
Daily	78	79	157

Figure 4.6: Previous Trip Generation – Retail units

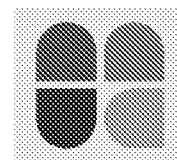
Combined Trip Generation – Previous Site

4.2.8 The vehicle trip generation associated with each of the previous site uses have been summed to provide an overall existing trip generation. The overall trips associated with the existing site are shown in **Figure 4.7**.

TRICS Vehicle Trip Generation – Existing Site			
	Arrivals	Departures	Two-Way
AM Peak Hour	5	6	11
PM Peak Hour	17	13	30
Daily	221	227	448

Figure 4.7: Overall Trip Generation – Existing Site

4.2.9 The TRICS assessment revealed that the existing site would generate 448 daily 2-way vehicle movements of which 11 would occur during the network's AM peak traffic hour, and 30 would occur in the network's PM peak traffic hour.



4.3 Proposed Development

Flats

- 4.3.1 To establish the number of anticipated vehicle trips associated with the proposed flats, the trip rates used for the previous site flats have been applied. The TRICS output is provided at **Appendix D**, whilst a summary of the weekday peak hour and daily trip rates, along with the subsequent vehicle movements associated with the proposed flats is provided in **Figure 4.8**.

TRICS Trip Rate per Flat			
	Arrivals	Departures	Two-Way
AM Peak Hour	0.063	0.222	0.285
PM Peak Hour	0.218	0.098	0.316
Daily	1.414	1.431	2.845
TRICS Vehicle Trip Generation – 35 Flats			
AM Peak Hour	2	8	10
PM Peak Hour	8	3	11
Daily	49	50	100

Figure 4.8: Proposed Trip Generation – Flats

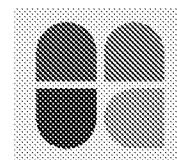
Retail

- 4.3.2 To establish the number of anticipated vehicle trips associated with the proposed retail, the trip rates used for the site's previous retail use have been applied. The TRICS output is provided at **Appendix F** whilst a summary of the weekday peak hour and daily trip rates, along with the subsequent vehicle movements associated with the proposed retail is provided in **Figure 4.9**.

TRICS Trip Rate per 100sqm			
	Arrivals	Departures	Two-Way
AM Peak Hour	6.065	5.591	11.656
PM Peak Hour	6.452	6.624	13.076
Daily	87.108	87.338	174.446
TRICS Vehicle Trip Generation – 343sqm			
AM Peak Hour	21	19	40
PM Peak Hour	22	23	45
Daily	299	300	598

Figure 4.9: Proposed Trip Generation – Restaurant

- 4.3.3 As previously identified, it is notable that the majority of trips related to the retail element of the scheme would be pass-by / linked trips associated with existing retail and tourist amenities on Bognor Regis seafront. Consequently, the number of trips that are new to the local road network would be lower than that identified in **Figure 4.9**. As the exact nature of retail element is uncertain it is not possible to quantify any reductions associated with pass-by / linked trips.



Combined Trip Generation – Proposed Development

- 4.3.4 The vehicle trip generation associated with each of the proposed site uses have been summed to provide a total trip generation. The total trips associated with the proposed site are shown in **Figure 4.10**.

TRICS Vehicle Trip Generation – Proposed Development			
	Arrivals	Departures	Two-Way
AM Peak Hour	23	27	50
PM Peak Hour	30	26	56
Daily	348	350	698

Figure 4.10: Overall Trip Generation – Proposed Development

- 4.3.5 Without adjustment for pass-by / linked trips, the TRICS assessment revealed that the proposed development would generate 698 daily 2-way vehicle movements of which 50 would occur during the network's AM peak traffic hour, and 56 would occur in the network's PM peak traffic hour.

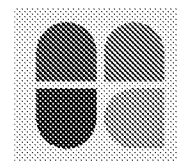
4.4 Net Traffic Impact

- 4.4.1 The traffic generations associated with the previous site and the proposed development have been compared to establish the net traffic generation associated with the development. A summary of the weekday peak hour and daily trip rates is provided in **Figure 4.11**.

TRICS Vehicle Trip Generation			
	Arrivals	Departures	Two-Way
AM Peak Hour	+18	+21	+39
PM Peak Hour	+13	+13	+26
Daily	+127	+123	+250

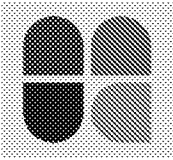
Figure 4.11: Net Trip Generation *discrepancies due to rounding

- 4.4.2 The TRICS assessment suggests that the overall site would result in a net increase of 250 daily 2-way vehicle movements including an increase of 39 trips in the network's AM peak hour and 26 trips in the PM peak hour.
- 4.4.3 As previously identified, reductions associated with retail 'pass-by' or 'linked' trips have not been applied meaning the figures shown in **Figure 4.11** are robust and the net trip generation would be substantively lower in reality.



5 SUMMARY AND CONCLUSION

- 5.1.1 This TS has been prepared by Bright Plan Ltd on behalf of B5 Ltd to support a planning application for a mixed-use development at the Waterloo Square, Bognor Regis. The conclusions from this report are as follows:
- i. The proposed development would comprise 35 apartments and 3 retail units.
 - ii. The application site is situated in a highly accessible location providing convenient access on foot, by cycle and by public transport. There is a range of services and amenities available with walking and cycling distance of the site.
 - iii. The PIA record does not reveal any concern to highway safety in relation to the development as acknowledged by WSCC.
 - iv. Vehicle access to the site would be provided for staff and servicing purposes only. A service area would adjoin the west side of Norfolk Street.
 - v. A vehicle swept path analysis has been undertaken to demonstrating that the service area operates appropriately without implications for Norfolk Streets operation.
 - vi. The service arrangement has been subject to a Stage 1 Road Safety Audit. All problems were accepted, and the recommended measures incorporated into the design.
 - vii. Refuse collection would be undertaken from Norfolk Street as per the previous arrangement for the site and the existing arrangement for neighbouring properties.
 - viii. Deliveries to the retail units would be undertaken within the servicing area adjoining Norfolk Street.
 - ix. The proposed development would provide 5 car parking space which would serve site staff only. The parking requirements for residents and retail customers would be accommodated on the local road network as per the previous site which has greater parking demand.
 - x. Cycle parking for residents, staff and visitors would be provided in line with ADC's parking standards.
 - xi. A vehicle trip generation assessment suggests that the development will result in a net increase of 250 daily vehicle trips.
 - xii. Reductions associated with retail 'pass-by' / 'linked' trips have not been applied meaning both vehicle trips and parking demand figures would be lower than those outlined in this report.



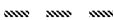
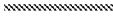
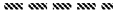
PLANS

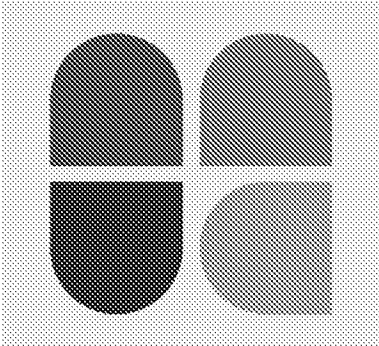
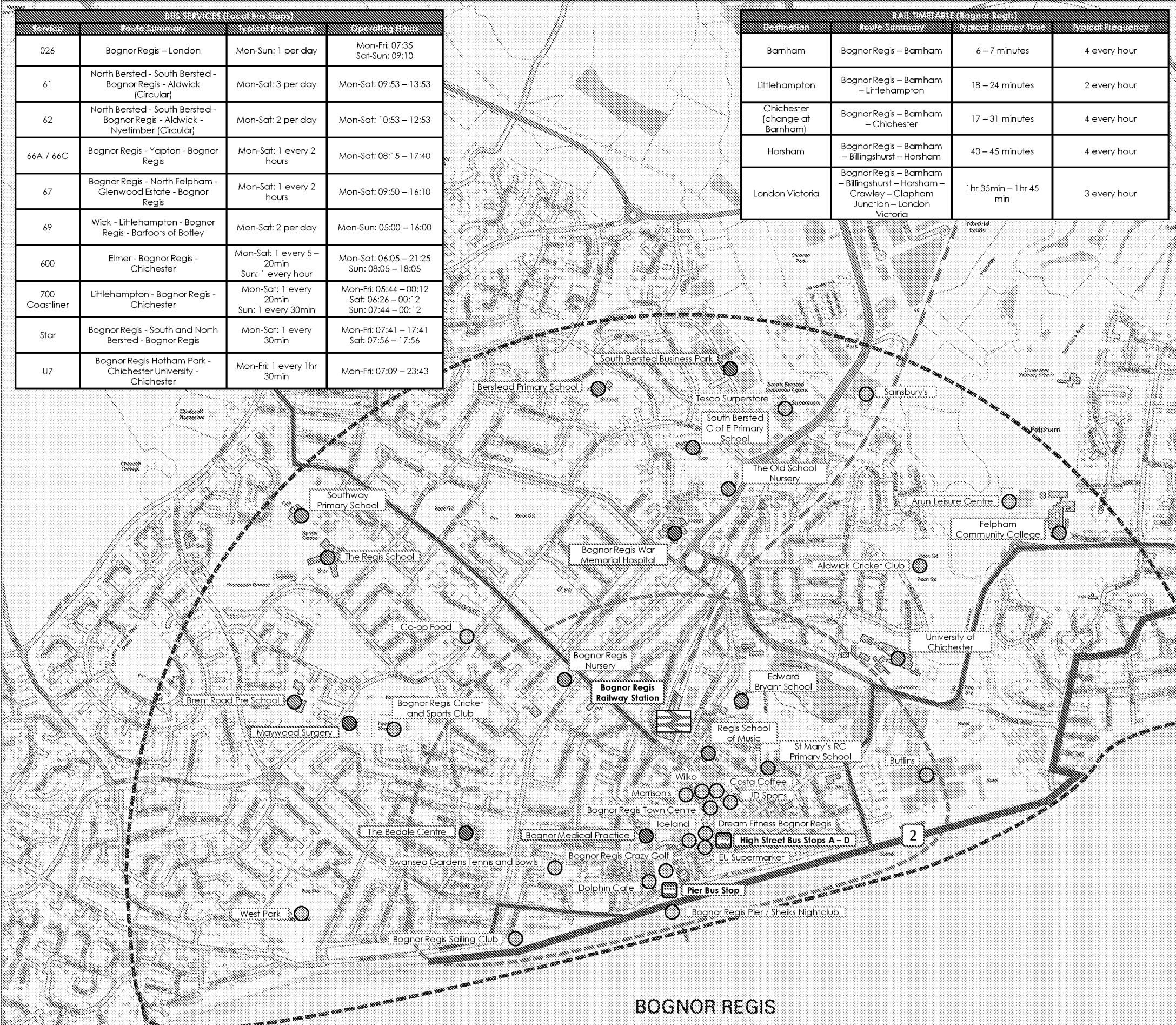
Plan 01 Accessibility Plan

BUS SERVICES (Local Bus Only)			
Service	Route Summary	Typical Frequency	Operating Hours
026	Bognor Regis – London	Mon-Sun: 1 per day	Mon-Fri: 07:35 Sat-Sun: 09:10
61	North Bersted - South Bersted - Bognor Regis - Aldwick (Circular)	Mon-Sat: 3 per day	Mon-Sat: 09:53 – 13:53
62	North Bersted - South Bersted - Bognor Regis - Aldwick - Nyetimber (Circular)	Mon-Sat: 2 per day	Mon-Sat: 10:53 – 12:53
66A / 66C	Bognor Regis - Yapton - Bognor Regis	Mon-Sat: 1 every 2 hours	Mon-Sat: 08:15 – 17:40
67	Bognor Regis - North Felpham - Glenwood Estate - Bognor Regis	Mon-Sat: 1 every 2 hours	Mon-Sat: 09:50 – 16:10
69	Wick - Littlehampton - Bognor Regis - Barfoots of Botley	Mon-Sat: 2 per day	Mon-Sun: 05:00 – 16:00
600	Elmer - Bognor Regis - Chichester	Mon-Sat: 1 every 5 – 20min Sun: 1 every hour	Mon-Sat: 06:05 – 21:25 Sun: 08:05 – 18:05
700 Coastliner	Littlehampton - Bognor Regis - Chichester	Mon-Sat: 1 every 20min Sun: 1 every 30min	Mon-Fri: 05:44 – 00:12 Sat: 06:26 – 00:12 Sun: 07:44 – 00:12
Star	Bognor Regis - South and North Bersted - Bognor Regis	Mon-Sat: 1 every 30min	Mon-Fri: 07:41 – 17:41 Sat: 07:56 – 17:56
U7	Bognor Regis Hotham Park - Chichester University - Chichester	Mon-Fri: 1 every 1hr 30min	Mon-Fri: 07:09 – 23:43

RAIL TIMETABLE (Bognor Regis)			
Destination	Route Summary	Typical Journey time	Typical Frequency
Barnham	Bognor Regis – Barnham	6 – 7 minutes	4 every hour
Littlehampton	Bognor Regis – Barnham – Littlehampton	18 – 24 minutes	2 every hour
Chichester (change at Barnham)	Bognor Regis – Barnham – Chichester	17 – 31 minutes	4 every hour
Horsham	Bognor Regis – Barnham – Billingshurst – Horsham	40 – 45 minutes	4 every hour
London Victoria	Bognor Regis – Barnham – Billingshurst – Horsham – Crawley – Clapham Junction – London Victoria	1hr 35min – 1hr 45 min	3 every hour

LEGEND

-  SITE LOCATION
-  RAIL STATION
-  RAILWAY
-  BUS STOPS
-  NATIONAL CYCLE ROUTES
-  LOCAL CYCLE ROUTES
-  1 KM ISOCHRONE
-  2 KM ISOCHRONE
-  RETAIL
-  EDUCATION
-  LEISURE
-  HEALTH CARE
-  EMPLOYMENT



BRIGHT PLAN

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West Sussex, PO20 3AF
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www.bpcivils.co.uk

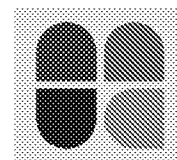
Client: B5 Ltd

Project: Waterloo Square, Bognor Regis

Title: Accessibility Plan

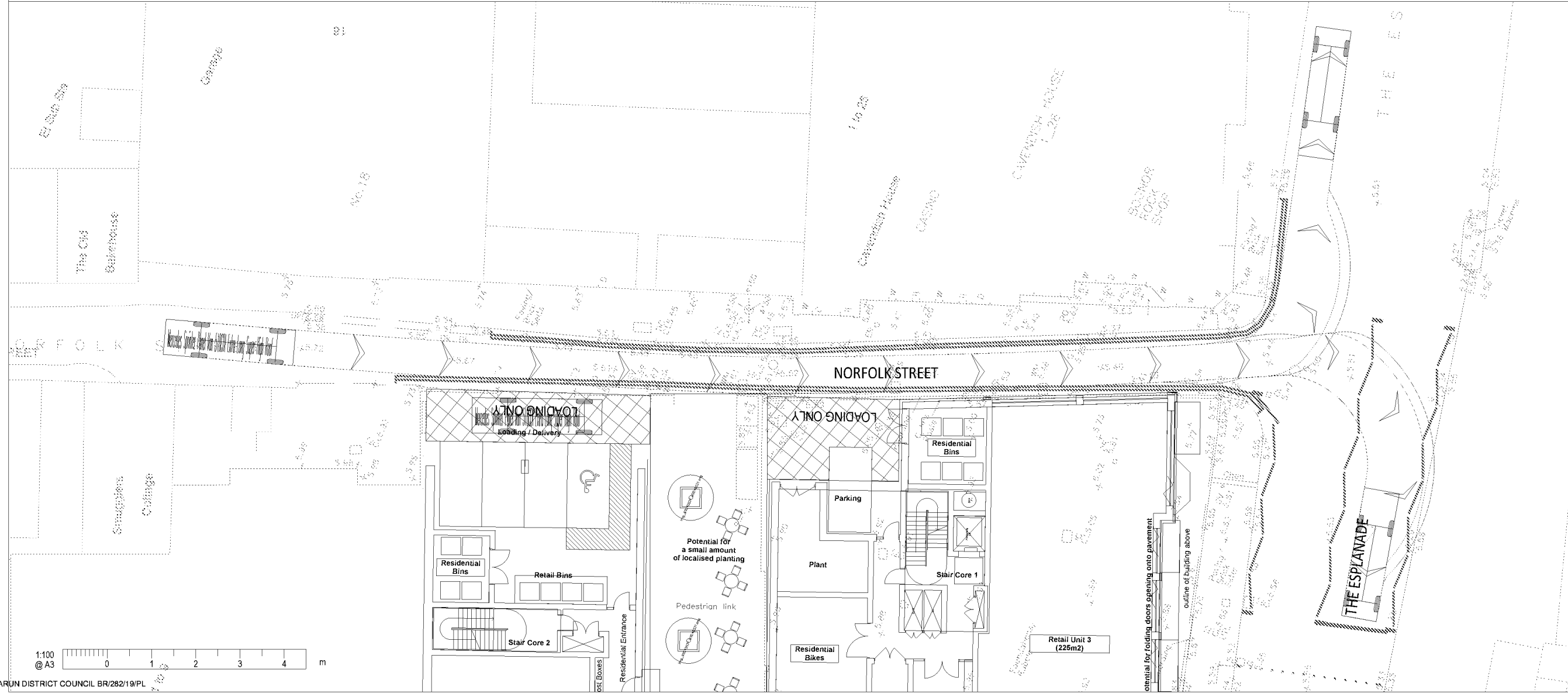
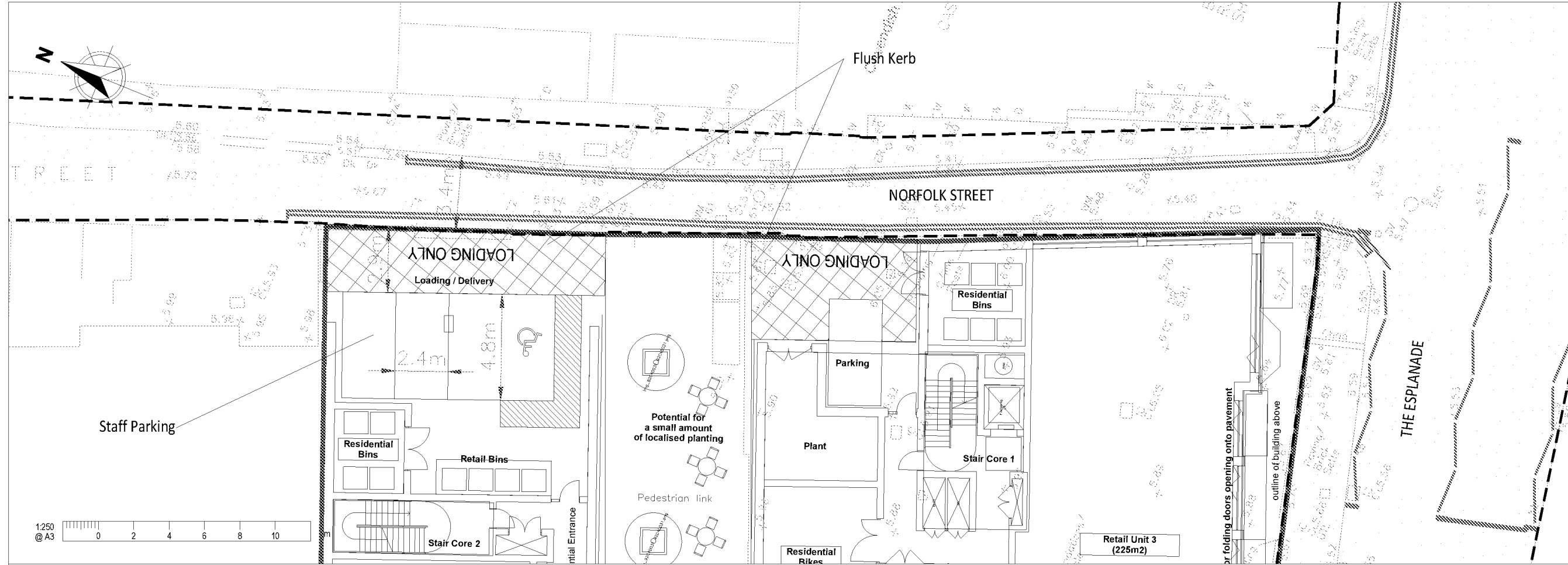
Scale: NTS	Date: Feb 2020	Drawn By: SMO	Checked By: EJD
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Plan No: Plan 01	Job No: 6153	Rev: -
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DRAWINGS

- 001** Access Overview and Swept Path Analysis
- 002** Servicing Vehicle Swept Path Analysis
- 003** Car Parking Swept Path Analysis

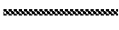


NOTES

A3

1. This drawing is to be read in conjunction with all other Bright Plan drawings, and with all relevant Architect's and Engineer's drawings and specification. Any discrepancies found are to be reported immediately to the Engineer.
2. Bright Plan accepts no responsibility for inaccuracies in data provided by third parties such as topographic surveys or Ordnance Survey mapping.
3. Do not scale, work to figured dimensions only. All dimensions are in millimeters unless noted otherwise and all levels are in metres from the topographic survey datum.
4. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain.

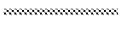
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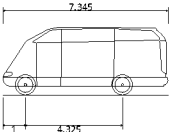
Site Boundary



Highway Boundary



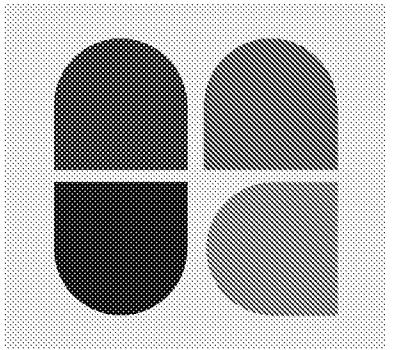
Existing Road Markings



Mercedes Sprinter Panel Van 518CDI
Extra Long Super High Roof
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to lock time
Wall to Wall Turning Radius

7.345m
1.993m
3.030m
0.400m
1.993m
5.00s
7.800m

B	Revised Layout	28/05/2020
A	Final Issue	06/03/2020
-	Original Issue	26/02/2020
Rev.	Amendments	Date



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Tel: 01243 210418 Email: enquiries@bpcivils.co.uk
www.bpcivils.co.uk

Drawing Status	FINAL
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Client	B5 Ltd
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Project	Waterloo Square, Bognor Regis
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Drawing Title	Access Overview and Swept Path Alaysis
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Scale	Date	Drawn By	Checked By
As Shown	May 2020	SMO	ALB

Drawing No.	Rev.
2020-6153-001	B



NOTES

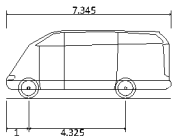
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-LEGEND-

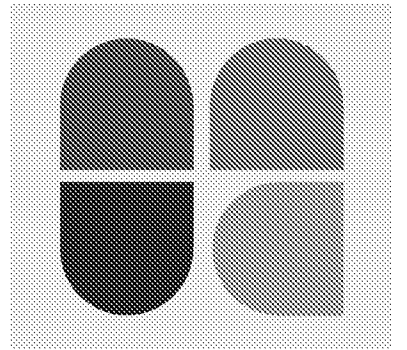


Existing Road Markings



Mercedes Sprinter Panel Van 518CDI
Extra Long Super High Roof
Overall Length 7.345m
Overall Width 1.993m
Overall Body Height 3.030m
Min Body Ground Clearance 0.400m
Track Width 1.993m
Lock to lock time 5.00s
Wall to Wall Turning Radius 7.800m

B	Revised Access	27/05/2020
A	Final Issue	06/03/2020
-	Original Issue	26/02/2020
Rev.	Amendments	Date



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Drawing Status	FINAL
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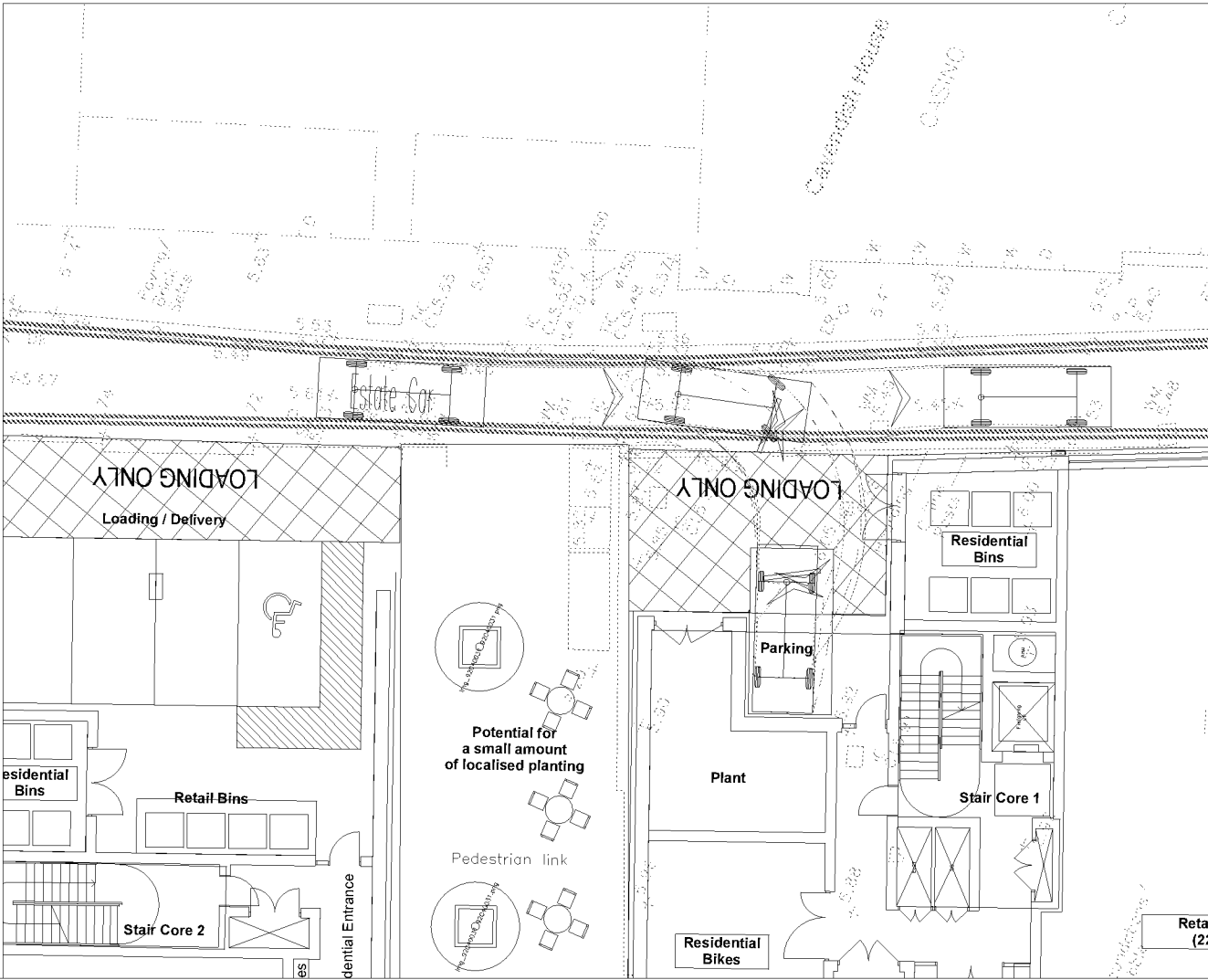
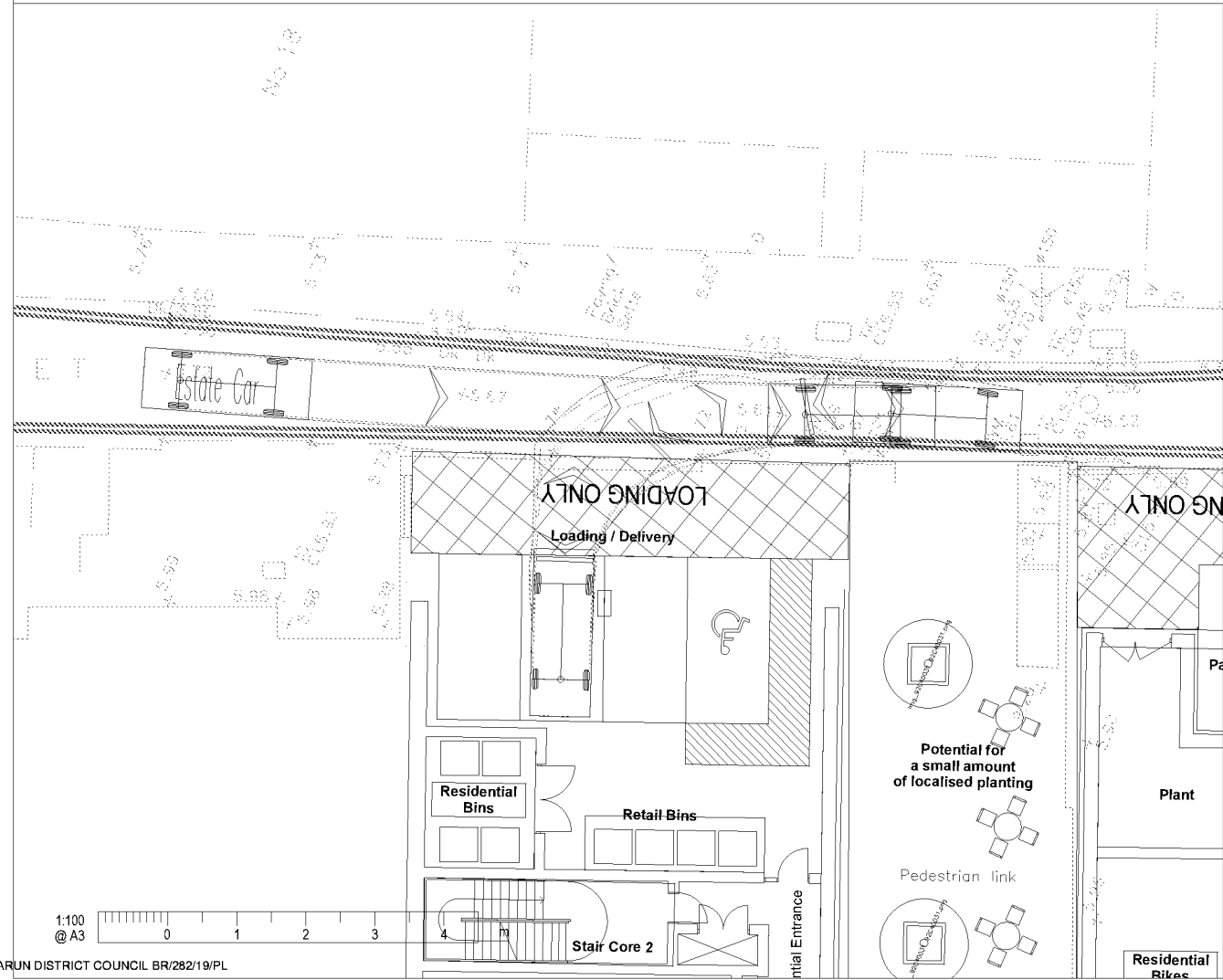
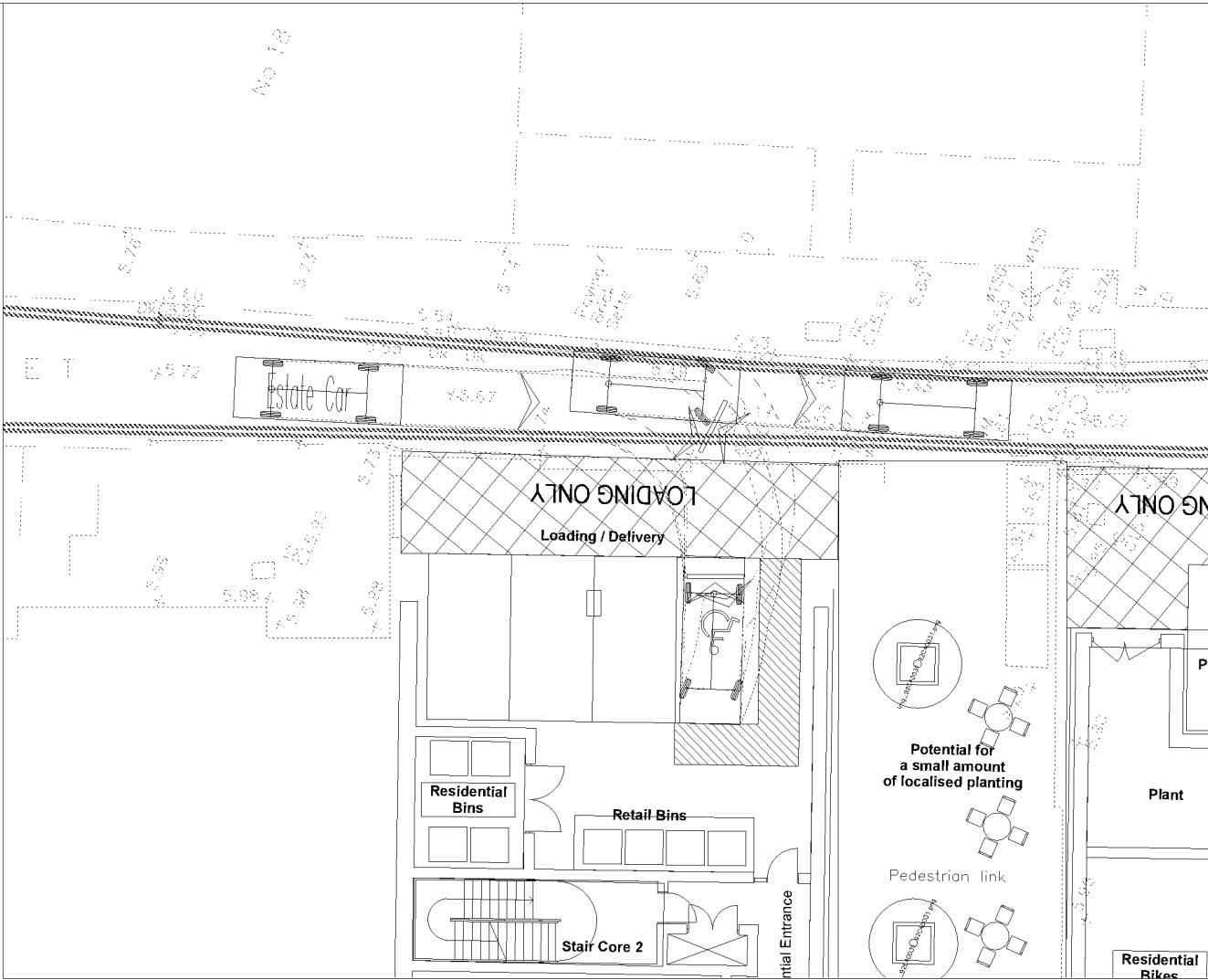
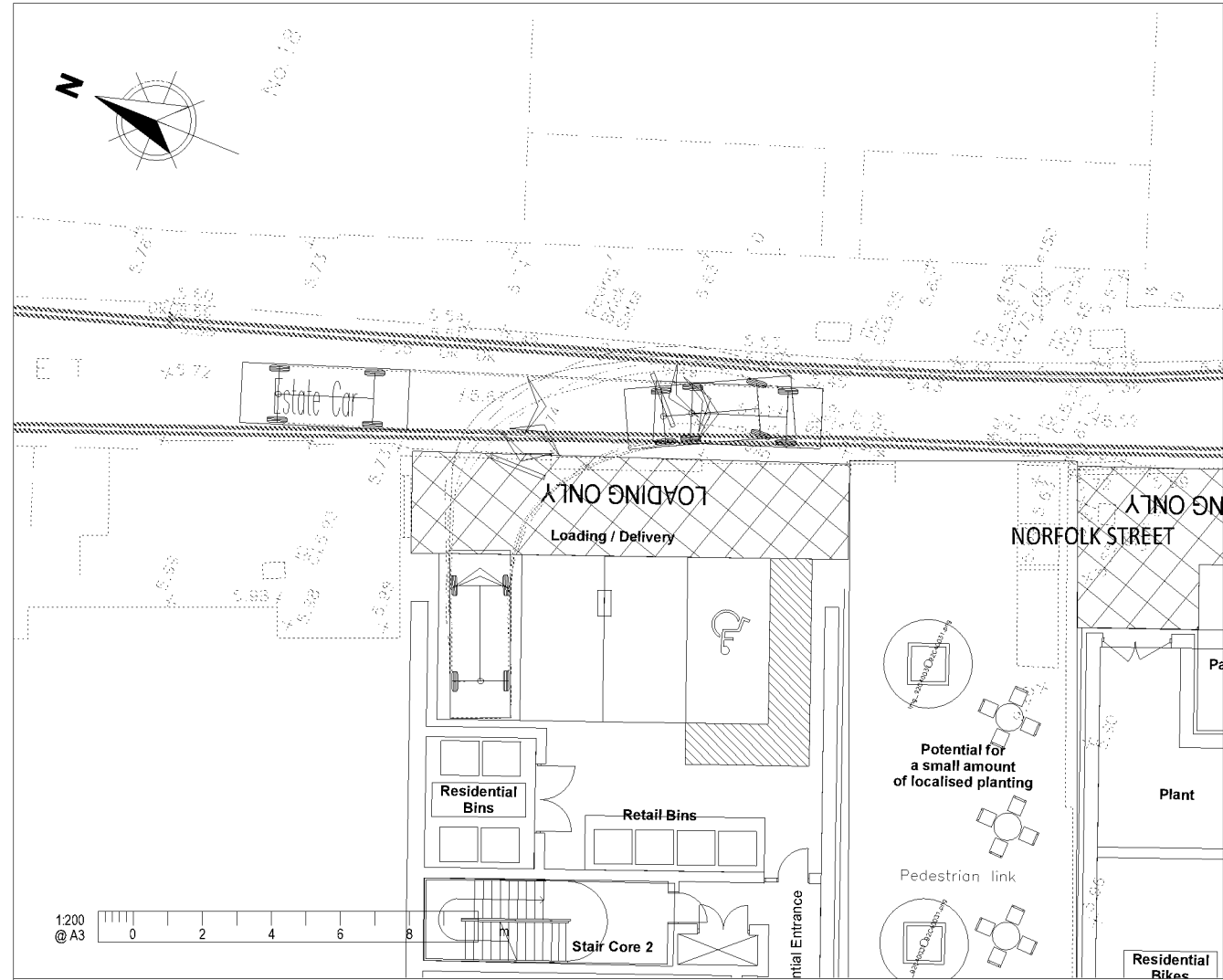
Client	B5 Ltd
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Project	Waterloo Square, Bognor Regis
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Drawing Title	Servicing Vehicle Swept Path Analysis
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Scale	Date	Drawn By	Checked By
As Shown	May 2020	SMO	ALB

Drawing No.	Rev.
2020-6153-002	B



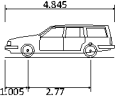
NOTES

A3

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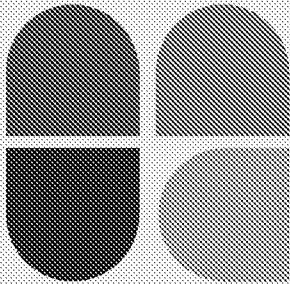
-LEGEND-

Existing Road Markings



Estate Car
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Overall Width 1.750m
Overall Body Height 1.424m
Min Body Ground Clearance 0.189m
Max Track Width 1.655m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 4.950m

B	Revised Access	27/05/2020
A	Final Issue	06/03/2020
-	Original Issue	26/02/2020
Rev.	Amendments	Date



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Drawing Status	FINAL
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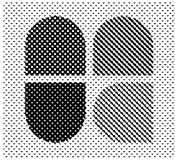
Client	B5 Ltd
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Project	Waterloo Square, Bognor Regis
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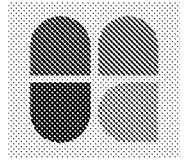
Drawing Title	Car Parking Swept Path Analysis
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Scale	As Shown	Date	May 2020	Drawn By	SMO	Checked By	ALB
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Drawing No.	2020-6153-003	Rev.	B
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APPENDICES



Appendix A WSCC Highways Consultation Response 03/12/19

WEST SUSSEX COUNTY COUNCIL CONSULTATION

TO:	Arun District Council FAO: Simon Davis
FROM:	WSCC - Highways Authority
DATE:	27 April 2020
LOCATION:	The Beach Hotel, former Mud Club & 2-4 Waterloo Square Bognor Regis PO21 1SU
SUBJECT:	BR/282/19 Redevelopment into 35 No. 1 & 2 bed apartments and 3 No. commercial units (A1 Retail or A3 Restaurant/Cafe). This application affects the character & appearance of The Steyne, Bognor Regis Conservation Area & may affect the setting of a listed building. More Info/ Amended Description/ Proposal
DATE OF SITE VISIT:	29 March 2020
RECOMMENDATION:	More Information

Summary

West Sussex County Council, in its capacity as Local Highway Authority (LHA), has been re-consulted on proposals for mixed residential/commercial scheme on land at former Beach Hotel and Mud Club.

The proposed scheme has reduced in scale from 49 x flats to 35 x flats with an increase from 2 x commercial units on ground floor to 3 x commercial units (retail/restaurant). The site has been split across two buildings to provide pedestrian walkthrough space between Norfolk Street and Waterloo Square. The previously proposed basement car parking level has been omitted and some limited vehicle access from Norfolk Street proposed in the form of undercroft parking, with no turn on site.

The LHA have assessed the amended scheme in terms of anticipated trip generation, parking demand and the proposed alterations to access arrangements.

Access Arrangements

No vehicular access is now proposed from Waterloo Square. Some vehicular access to loading bay and limited car parking is proposed from Norfolk Street (one way) to the rear. Whilst no turn on site is proposed for the car parking, considering the low traffic levels and anticipated speeds, the LHA would not raise an objection to this, in principle. Nevertheless, the spaces and the revised loading bay should be demonstrated as workable via swept path tracking diagrams. This should also include demonstration that anticipated vehicles can negotiate High Street from its junction with West Street and enter and exit the site.

The previous Road Safety Audit (RSA) is not applicable. Considering the number of units and WSCC RSA policy, the LHA would require a new RSA for the proposed amended access arrangements. Considering the current social distancing requirement, undertaking a site visit for stage 1 RSA would not be required at this time.

Trip Generation

The LHA are mindful that the residential element of the scheme has been reduced in scale. Nevertheless, the retail element comprises an increase in floor area. Consequently,

the LHA would request that amended trip generation information is provided from TRIC's (Trip Rate Information Computer Systems) to fully assess the anticipated vehicular trip generation as a result of the amended proposals.

Car & Bicycle Parking Demand

The floor plans indicate a total of 23 x 2-bedroom and 12 x 1-bedroom units. Residential parking of 5 x spaces will be available accessed from Norfolk Street. One of these spaces will be marked up for disabled use. It is advised that 20% of the spaces are also provided with Electric Vehicle (EV) charging infrastructure. The Arun Supplementary Planning Guidance (SPD) requires 1 x space per apartment and thus the parking provision is short by 30 x spaces. Nevertheless, the LHA acknowledge the accessible location in terms of options for sustainable transport and proximity to amenities meaning that a reliance on the private car would not wholly be necessary for all residents. Furthermore, the surrounding area is a Controlled Parking Zone (CPZ) and thus overspill parking nearby on-street is not anticipated to take place in locations that would be deemed detrimental to highway safety. The Local Planning Authority (LPA) may wish to assess the amount of parking proposed from an amenity aspect, as there is no guarantee that residents would be able to obtain permits to park nearby on-street within the CPZ.

It would appear that the amount of commercial floor space has increased and that one of the units will be retail, with the other two as café use. Without knowing which unit is allocated to each use it is challenging to predict anticipated parking demand. Nevertheless, the LHA are mindful of the small increase over previous proposal and no allocated car parking will be provided for the commercial element which is not uncommon for such use on a seafront location, especially where such site constraints are present and on-street parking and public car parks are available and within walking distance of the site.

Residential bicycle parking for 36 x cycles has been indicated. This is line with the SPD, which would require one space per unit. Some internal retail cycle storage is proposed and it is assumed that this is for staff. External spaces are proposed for customers along the Waterloo Square frontage. The applicant should be mindful of the SPD guidelines for bicycle storage whereby A1 retail use would require 1 space per 100sqm for staff and 1 space per 100sqm for customers and A3 café use would require 1 space per 4 staff and 1 space per 25sqm for customers. Details of bicycle parking can be secured via condition.

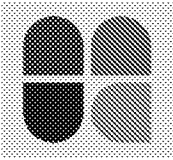
Conclusion

In summary, the LHA require further information in order to fully assess the highway safety and capacity impacts of the amended scheme, namely:

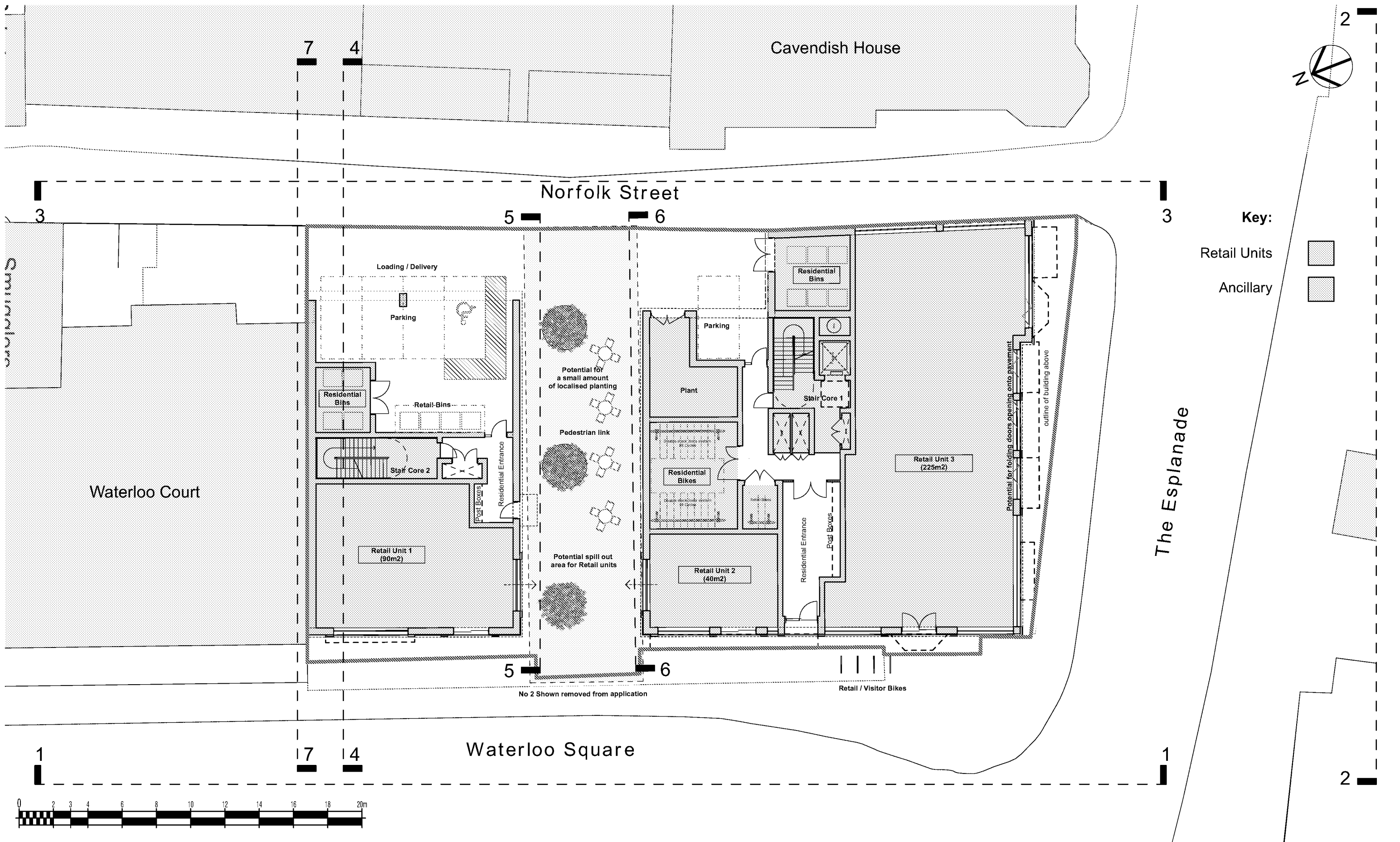
- Updated RSA to assess alterations to access arrangements including access to parking and loading bay arrangements.
- Swept path tracking diagrams to fully demonstrate workability of proposed parking spaces and loading bay including wider access from High Street/West Street for anticipated vehicles (refuse/ deliveries).
- Trip generation – amended assessment of the anticipated vehicular trip generation from both residential and commercial element.

Please ask applicant for this additional information and re-consult.

Katie Kurek
West Sussex County Council – Planning Services



Appendix B Site Layout



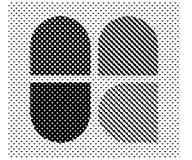
Revisions	Date (yymmdd)	Description	Notes
			Layout subject to survey information and design development

Project Title:	Date:
Waterloo Square, Bognor Regis	20.04.01
Document Title:	Drawn by / Checked by:
Proposed Ground Floor plan	SR / GG
Drawing Scale / Sheet Size:	Client:
1:200 @ A3	B5 ltd
Drawing Status:	Drawing Number / Revision:
PLANNING	18.103.402

HGP

ARCHITECTS

Furzehall Farm
Wickham Road, Fareham
Hampshire, PO15 7JH
01329 283225
email@hgp-architects.co.uk



Appendix C Stage 1 Road Safety Audit



Road Safety Audit Stage 1

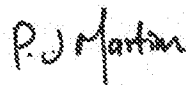
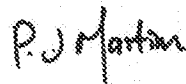
**Waterloo Square, Bognor Regis – Access
onto Norfolk Street**

Client: Bright Plan Ltd

Road Safety Answers reference no: RSA248

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Registered address: 17 McDermott Road, Borough Green, Sevenoaks, Kent, TN15 8SA
www.roadsafetyanswers.co.uk paulmartin@roadsafetyanswers.co.uk
VAT registration number: 258 9498 33

Control Sheet

	Name	Date	Signature
Author	Paul Martin	29/05/2020	
Checker	David Dodd	29/05/2020	
Authoriser	Paul Martin	29/05/2020	

Report Version

RSA Report Ref.	Version	Date of Issue
RSA248	Final	29/05/2020

1. Introduction

1.1 This report describes a Stage 1 Road Safety Audit carried out on the preliminary design for Section 278 Works associated the redevelopment of land accessing onto Waterloo Square, Bognor Regis, for Bright Plan at the request of West Sussex County Council. The audit was carried out in the office of Road Safety Answers Ltd during March and May 2020.

1.2 The audit team members were as follows:

Team Leader

Paul Martin - BSc (Hons), CEng, FCIHT, FSoRSA, IEng, MICE
HE Approved RSA Certificate of Competency (2013)
Director, Road Safety Answers Ltd

Team Member

David Dodd – BSc(Hons), DipNEBOSH, FIHE, IEng. MCIHT, MSoRSA
Independent Highway and Road Safety Consultant

1.3 The audit comprised an examination of the documents listed in **Appendix A**, and included the drawings supplied by Alex Budd of Bright Plan. The site was visited by the Audit Team, together, on 2nd March 2020 between 12.10 and 12.30 hours. The weather was fine and the road surface was dry. Traffic flows were light. Pedestrian and cycle flows were also light.

1.4 The terms of reference of the audit are as described in the UK's national standard for road safety audit, GG 119. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.

1.5 All the problems described in this report are considered by the audit team to require action to improve the safety of the scheme and minimise accident occurrence. A plan showing the problems can be found in **Appendix B**.

1.6 The purpose of the scheme is to provide access onto Norfolk Street for 35 residential flats/apartments and three small retail units requiring five parking spaces for staff and two small loading bays for deliveries.

1.7 The scheme consists the following elements:

- Two flush vehicular accesses directly onto the western edge of the carriageway of Norfolk Street (no footway on the western side);
- The northern parking area (four parking bays for staff at right angles to Norfolk Street) set back 2.9m from the edge of carriageway to allow



Scheme: Waterloo Square, Bognor Regis – Access onto Norfolk Street
Client: Bright Plan (Highway Authority: West Sussex County Council)

- a delivery vehicle to load/load parallel to the carriageway on a 15.5m long loading bay, blocking the four parking spaces for short periods;
- The southern parking/loading area with a single parking bay for staff (set back 2.9m and at right angles to Norfolk Street), with a 9.2m long loading bay between the parking bay and the carriageway,
- An 8.2m wide walkway, between the two parking/loading areas, on which a manoeuvring delivery vehicle could overrun slightly if necessary to access Norfolk Street without having to reverse.

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Location: A – Northern end of the development access onto Norfolk Street.

Summary: Risk of side swipe collisions.

The drawing does not indicate whether there will be a boundary treatment on the northern boundary on the site e.g. a wall or fence. Photo 1 shows the site, currently derelict, and the adjacent property frontage to the north, on which vehicles park. If the boundary treatment is low i.e. less than 1.05m in height, drivers exiting the proposed parking bays will be able to see over the bonnets of the vehicles parked to the north, minimising the conflicts with vehicles approaching from the north on this one-way street. If the boundary treatment is too high, the visibility will be obscured, and the risk of a side impact increases, albeit slightly; vehicle speeds in this narrow street are low, and the parking spaces are for staff – trips to and from them will, therefore, be infrequent).



Photo 1: Looking south towards the Waterloo Square development land (currently derelict)



RECOMMENDATION

Any boundary treatment along the northern edge of the development should be kept below 1.05m.

Design Team Response: Problem and Recommendation Accepted.

Any boundary treatment along the northern edge of the development would be kept below 1.05m.

Client Officer Response:



3. Audit Team Statement

We certify that this road safety audit has been carried out in accordance with GG 119.

Audit Team Leader

Paul Martin - BSc (Hons), CEng, FCIHT, FSoRSA, IEng, MICE
HE Approved RSA Certificate of Competency
Director, Road Safety Answers Ltd

Signed

A handwritten signature in black ink that reads 'P.J. Martin'.

Date 29/05/2020

Audit Team Member

David Dodd – BSc(Hons), DipNEBOSH, FIHE, IEng. MCIHT, MSoRSA
Independent Highway and Road Safety Consultant

Signed

A handwritten signature in black ink that reads 'D.J. Dodd'.

Date 29/05/2020

Road Safety Answers Ltd
17, McDermott Road
Borough Green
Sevenoaks
Kent, TN15 8SA

- ☐ + 44 (0) 7710 980 141
- ☐ paulmartin@roadsafetyanswers.co.uk
- ☐ www.roadssafetyanswers.co.uk



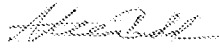
4. Design Team and Client Organisation Statements

Design Team Leader

I certify that I have reviewed the items raised in this Stage 1 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 Organisation's endorsement of my proposals.

Name: Alex Budd

Organisation: Bright Plan Ltd

Signed: 

Date: 29/05/2020

Client Organisation Project Manager

I certify that I have reviewed the comments and actions proposed by the Design Team Leader and, in this report, I have stated my agreement, or alternative proposal, or acceptance of the risk associated with the problem.

Name:

Organisation:

Signed:

Date:



Appendix A

Drawings and Documents Examined:

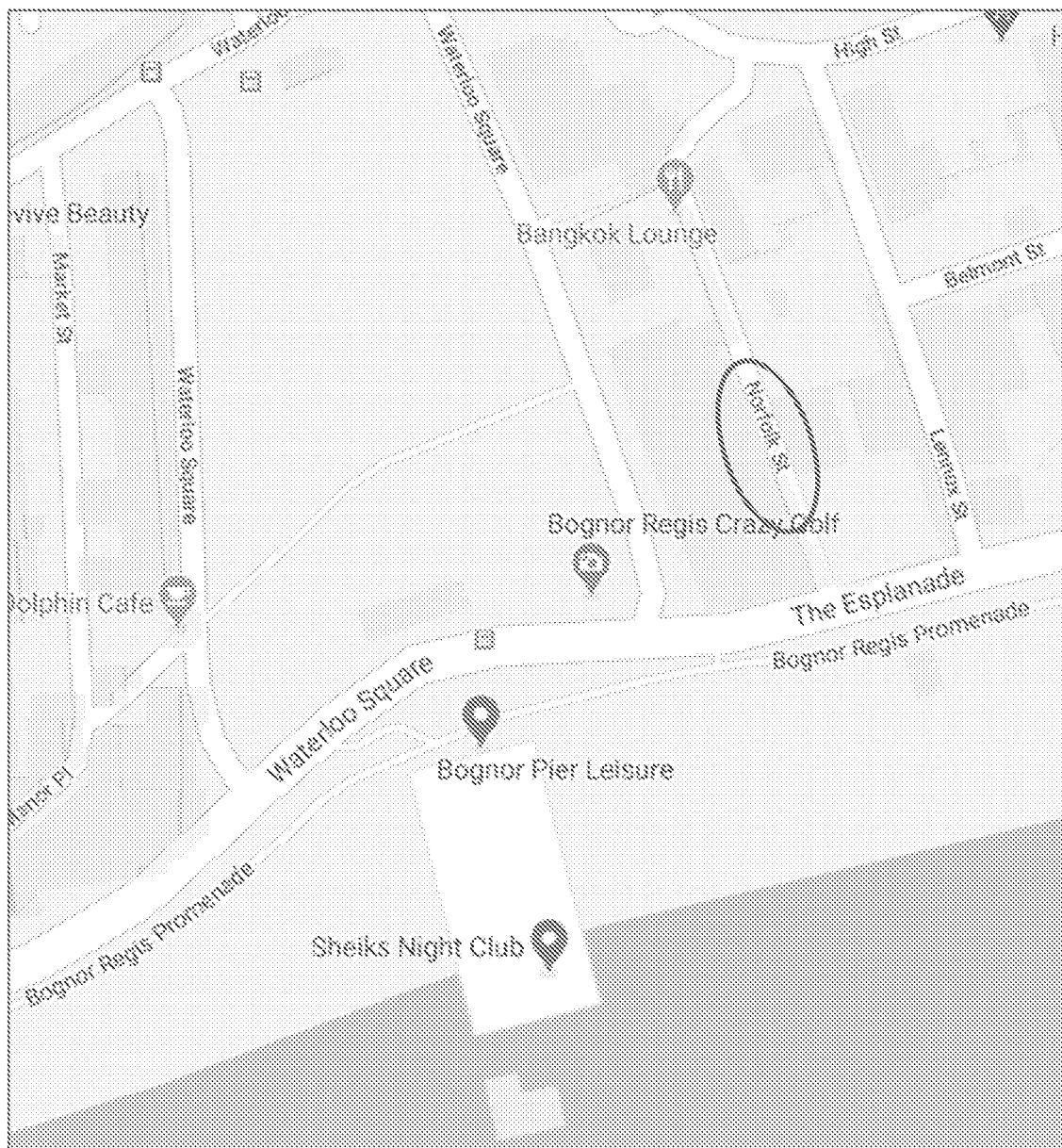
2020-6153-001 Rev B.pdf

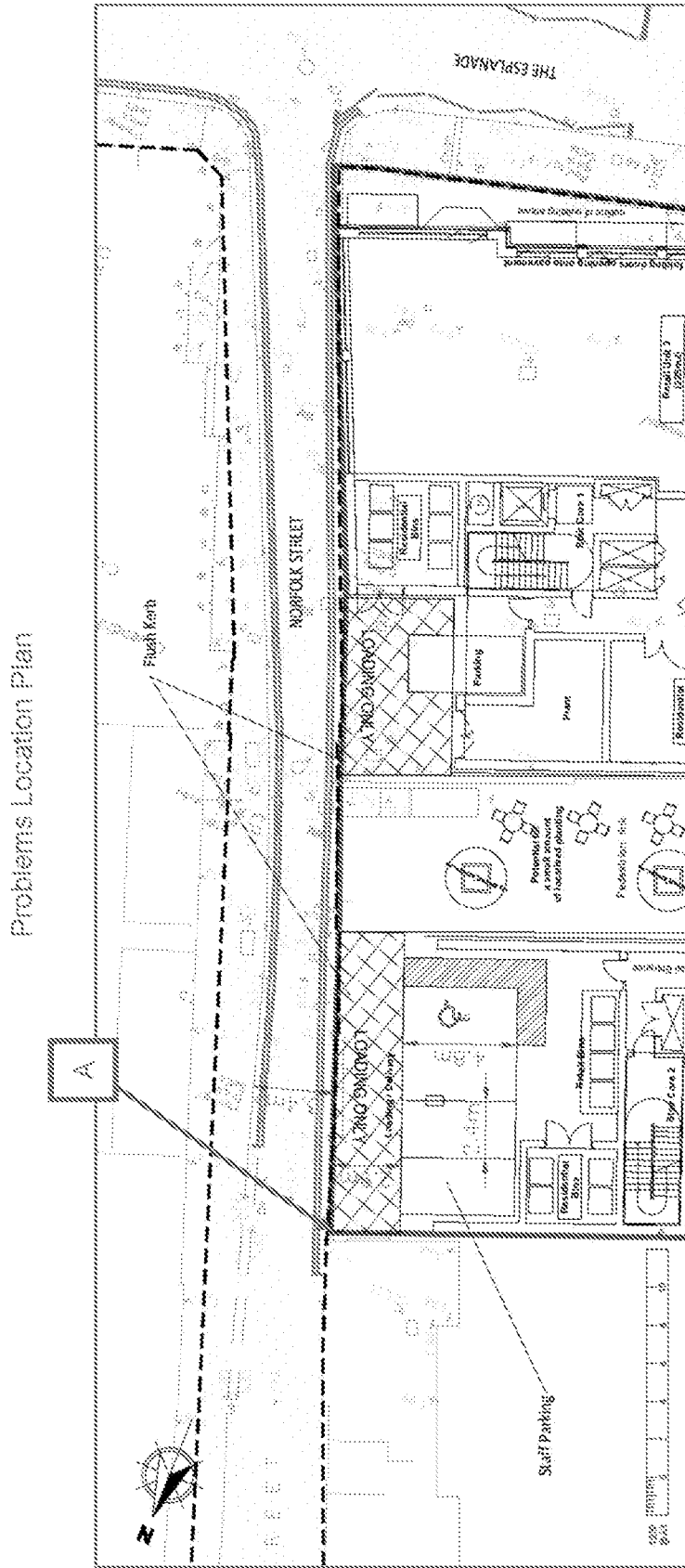
2020-6153-002 Rev B.pdf

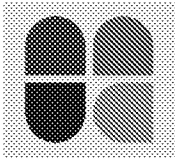
2020-6153-003 Rev B.pdf

Appendix B

The following plan shows the location of the scheme







Appendix D TRICS Output - Flats

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

VEHICLESSelected regions and areas:

02 SOUTH EAST	
BD BEDFORDSHIRE	1 days
EX ESSEX	2 days
03 SOUTH WEST	
DC DORSET	1 days
DV DEVON	1 days
04 EAST ANGLIA	
CA CAMBRIDGESHIRE	2 days
NF NORFOLK	1 days
SF SUFFOLK	2 days
09 NORTH	
CB CUMBRIA	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
 Actual Range: 6 to 94 (units:)
 Range Selected by User: 6 to 100 (units:)

Parking Spaces Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 13/11/18

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

Selected survey days:

Monday	3 days
Tuesday	4 days
Wednesday	1 days
Thursday	2 days
Friday	1 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	6
Suburban Area (PPS6 Out of Centre)	5

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

Selected Location Sub Categories:

Residential Zone	7
Built-Up Zone	2
No Sub Category	2

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

Secondary Filtering selection:Use Class:

C3

11 days

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

Population within 1 mile:

10,001 to 15,000

3 days

15,001 to 20,000

1 days

20,001 to 25,000

2 days

25,001 to 50,000

5 days

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

Population within 5 miles:

25,001 to 50,000

1 days

50,001 to 75,000

5 days

125,001 to 250,000

5 days

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

Car ownership within 5 miles:

0.6 to 1.0

1 days

1.1 to 1.5

10 days

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

Travel Plan:

No

11 days

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

PTAL Rating:

No PTAL Present

11 days

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

LIST OF SITES relevant to selection parameters

1	BD-03-C-02	BLOCKS OF FLATS	BEDFORDSHIRE
	STANBRIDGE ROAD LEIGHTON BUZZARD		
	Edge of Town Centre Residential Zone Total Number of dwellings: 62 Survey date: TUESDAY 15/05/18		Survey Type: MANUAL
2	CA-03-C-02	BLOCK OF FLATS	CAMBRIDGESHIRE
	WESTFIELD ROAD PETERBOROUGH NETHERTON Suburban Area (PPS6 Out of Centre) No Sub Category Total Number of dwellings: 44 Survey date: TUESDAY 18/10/11		Survey Type: MANUAL
3	CA-03-C-03	BLOCKS OF FLATS	CAMBRIDGESHIRE
	CROMWELL ROAD CAMBRIDGE Suburban Area (PPS6 Out of Centre) No Sub Category Total Number of dwellings: 82 Survey date: MONDAY 18/09/17		Survey Type: MANUAL
4	CB-03-C-03	FLATS & BUNGALOWS	CUMBRIA
	LOUND STREET KENDAL Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 33 Survey date: MONDAY 09/06/14		Survey Type: MANUAL
5	DC-03-C-02	FLATS IN BLOCKS	DORSET
	PALM COURT WEYMOUTH SPA ROAD Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 14 Survey date: FRIDAY 28/03/14		Survey Type: MANUAL
6	DV-03-C-01	BLOCK OF FLATS	DEVON
	BONHAY ROAD EXETER Edge of Town Centre Residential Zone Total Number of dwellings: 27 Survey date: MONDAY 10/07/17		Survey Type: MANUAL
7	EX-03-C-01	FLATS	ESSEX
	WESTCLIFF PARADE SOUTHEND-ON-SEA WESTCLIFF Edge of Town Centre Residential Zone Total Number of dwellings: 6 Survey date: TUESDAY 22/10/13		Survey Type: MANUAL
8	EX-03-C-02	BLOCK OF FLATS	ESSEX
	WESTCLIFF PARADE SOUTHEND-ON-SEA WESTCLIFF Edge of Town Centre Residential Zone Total Number of dwellings: 94 Survey date: TUESDAY 22/10/13		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-03-C-01	BLOCKS OF FLATS	NORFOLK
	PAGE STAIR LANE		
	KING'S LYNN		
	Edge of Town Centre		
	Built-Up Zone		
	Total Number of dwellings:	51	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL
10	SF-03-C-01	BLOCKS OF FLATS	SUFFOLK
	STATION HILL		
	BURY ST EDMUNDS		
	Edge of Town Centre		
	Built-Up Zone		
	Total Number of dwellings:	85	
	Survey date: THURSDAY	18/12/14	Survey Type: MANUAL
11	SF-03-C-03	BLOCKS OF FLATS	SUFFOLK
	TOLLGATE LANE		
	BURY ST EDMUNDS		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	30	
	Survey date: WEDNESDAY	03/12/14	Survey Type: MANUAL

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

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

VEHICLES**Calculation factor: 1 DWELLS****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	48	0.045	11	48	0.133	11	48	0.178
08:00 - 09:00	11	48	0.063	11	48	0.222	11	48	0.284
09:00 - 10:00	11	48	0.091	11	48	0.133	11	48	0.224
10:00 - 11:00	11	48	0.110	11	48	0.133	11	48	0.243
11:00 - 12:00	11	48	0.098	11	48	0.091	11	48	0.189
12:00 - 13:00	11	48	0.133	11	48	0.098	11	48	0.231
13:00 - 14:00	11	48	0.102	11	48	0.125	11	48	0.227
14:00 - 15:00	11	48	0.116	11	48	0.133	11	48	0.249
15:00 - 16:00	11	48	0.127	11	48	0.087	11	48	0.214
16:00 - 17:00	11	48	0.134	11	48	0.087	11	48	0.221
17:00 - 18:00	11	48	0.218	11	48	0.098	11	48	0.316
18:00 - 19:00	11	48	0.178	11	48	0.091	11	48	0.269
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.414			1.431			2.845

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

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

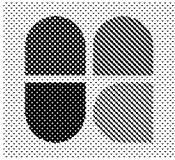
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Parameter summary

Trip rate parameter range selected: 6 - 94 (units:)
 Survey date range: 01/01/11 - 13/11/18
 Number of weekdays (Monday-Friday): 11
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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



Appendix E TRICS Output - Restaurant

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
 Category : B - RESTAURANTS

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 325 to 600 (units: sqm)
 Range Selected by User: 200 to 1000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 12/07/18

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

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

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

Selected Location Sub Categories:

Development Zone	1
Built-Up Zone	2

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

Secondary Filtering selection:Use Class:

A3	3 days
----	--------

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

Secondary Filtering selection (Cont.):Population within 1 mile:

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

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

Population within 5 miles:

100,001 to 125,000	1 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	2 days

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

Travel Plan:

No	3 days
----	--------

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

PTAL Rating:

No PTAL Present	3 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	CH-06-B-01	BBQ RESTAURANT	CHESHIRE
	SOUTERS LANE CHESTER		
	Edge of Town Centre Built-Up Zone		
	Total Gross floor area:	500 sqm	
	Survey date: TUESDAY	11/11/14	Survey Type: MANUAL
2	HC-06-B-01	PIZZA HUT	HAMPSHIRE
	BINNACLE WAY PORTSMOUTH COSHAM		
	Suburban Area (PPS6 Out of Centre) Development Zone		
	Total Gross floor area:	325 sqm	
	Survey date: MONDAY	23/11/15	Survey Type: MANUAL
3	WM-06-B-05	AKBARS	WEST MIDLANDS
	THE BUTTS COVENTRY		
	Edge of Town Centre Built-Up Zone		
	Total Gross floor area:	600 sqm	
	Survey date: THURSDAY	17/11/16	Survey Type: MANUAL

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS

VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	2	413	1.697	2	413	1.455	2	413	3.152
11:00 - 12:00	2	413	2.424	2	413	1.697	2	413	4.121
12:00 - 13:00	2	413	3.030	2	413	1.333	2	413	4.363
13:00 - 14:00	2	413	2.303	2	413	3.636	2	413	5.939
14:00 - 15:00	2	413	1.091	2	413	1.818	2	413	2.909
15:00 - 16:00	2	413	0.970	2	413	1.212	2	413	2.182
16:00 - 17:00	3	475	1.544	3	475	0.912	3	475	2.456
17:00 - 18:00	3	475	1.684	3	475	0.912	3	475	2.596
18:00 - 19:00	3	475	1.825	3	475	1.754	3	475	3.579
19:00 - 20:00	3	475	2.526	3	475	1.684	3	475	4.210
20:00 - 21:00	3	475	1.825	3	475	3.088	3	475	4.913
21:00 - 22:00	3	475	0.421	3	475	1.614	3	475	2.035
22:00 - 23:00	3	475	0.421	3	475	1.053	3	475	1.474
23:00 - 24:00	3	475	0.140	3	475	0.632	3	475	0.772
Total Rates:			21.901			22.800			44.701

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

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

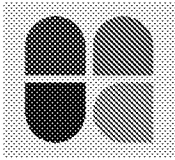
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Parameter summary

Trip rate parameter range selected:	325 - 600 (units: sqm)
Survey date range:	01/01/11 - 12/07/18
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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



Appendix F TRICS Output - Retail

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : I - SHOPPING CENTRE - LOCAL SHOPS

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	HF HERTFORDSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
09	NORTH	
	TV TEES VALLEY	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 260 to 1115 (units: sqm)
 Range Selected by User: 210 to 2000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 28/06/19

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

Residential Zone	4
------------------	---

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

Secondary Filtering selection:Use Class:

n/a	1 days
A1	1 days

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

Secondary Filtering selection (Cont.):Population within 1 mile:

10,001 to 15,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	1 days

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

Population within 5 miles:

100,001 to 125,000	2 days
125,001 to 250,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	4 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	4 days
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This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CH-01-I-02	LOCAL SHOPS	CHESHIRE
	CHRISTLETON ROAD		
	CHESTER		
	BOUGHTON HEATH		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	260 sqm	
	Survey date: TUESDAY	15/05/12	Survey Type: MANUAL
2	CH-01-I-03	LOCAL SHOPS	CHESHIRE
	MILL LANE		
	CHESTER		
	BACHE		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	365 sqm	
	Survey date: THURSDAY	17/05/12	Survey Type: MANUAL
3	HF-01-I-02	LOCAL SHOPS	HERTFORDSHIRE
	BROADWATER CRESCENT		
	STEVENAGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	1115 sqm	
	Survey date: FRIDAY	28/06/19	Survey Type: MANUAL
4	TV-01-I-04	LOCAL SHOPS	TEES VALLEY
	CARGO FLEET LANE		
	MIDDLESBROUGH		
	ORMESBY		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	585 sqm	
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL

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

Bright Plan 2 West Barn Chichester

Licence No: 305901

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS

VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	581	4.645	4	581	4.172	4	581	8.817
08:00 - 09:00	4	581	6.065	4	581	5.591	4	581	11.656
09:00 - 10:00	4	581	5.032	4	581	4.817	4	581	9.849
10:00 - 11:00	4	581	5.075	4	581	4.516	4	581	9.591
11:00 - 12:00	4	581	5.419	4	581	5.806	4	581	11.225
12:00 - 13:00	4	581	7.226	4	581	7.097	4	581	14.323
13:00 - 14:00	4	581	6.366	4	581	5.978	4	581	12.344
14:00 - 15:00	4	581	6.065	4	581	6.280	4	581	12.345
15:00 - 16:00	4	581	6.108	4	581	6.237	4	581	12.345
16:00 - 17:00	4	581	6.925	4	581	6.882	4	581	13.807
17:00 - 18:00	4	581	6.452	4	581	6.624	4	581	13.076
18:00 - 19:00	4	581	6.194	4	581	7.097	4	581	13.291
19:00 - 20:00	2	850	5.765	2	850	6.176	2	850	11.941
20:00 - 21:00	2	850	3.588	2	850	3.647	2	850	7.235
21:00 - 22:00	2	850	3.941	2	850	4.176	2	850	8.117
22:00 - 23:00	1	1115	2.242	1	1115	2.242	1	1115	4.484
23:00 - 24:00									
Total Rates:			87.108				87.338	174.446	

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

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

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Parameter summary

Trip rate parameter range selected:	260 - 1115 (units: sqm)
Survey date range:	01/01/12 - 28/06/19
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

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