

**PROPOSED RESIDENTIAL DEVELOPMENT
Broad Street Mall, Reading**

Inception (Reading) Sarl (c/o Moorgarth)
Transport Assessment

29 November 2018

Broad Street Mall Masterplan
Inception (Reading) Sarl (c/o Moorgarth)
Broad Street Mall, Reading

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1.0 INTRODUCTION

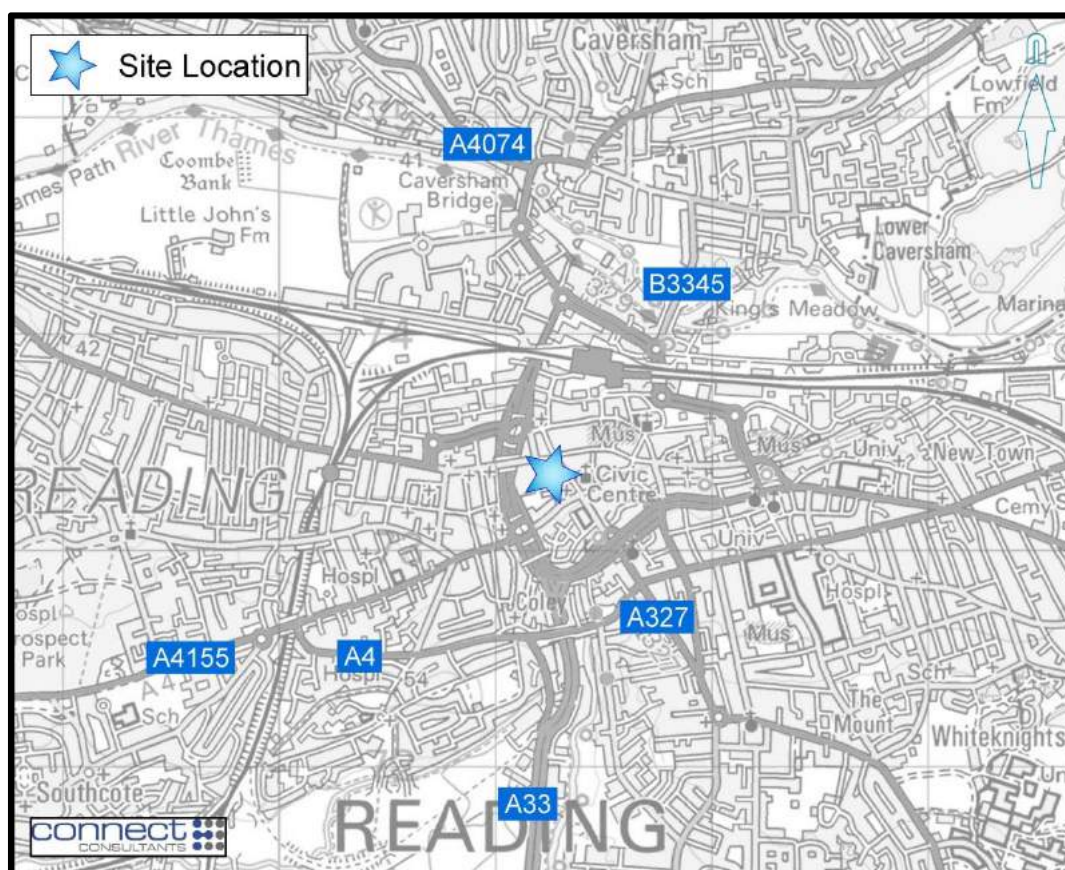
1.1 Appointment of Connect Consultants

- 1.1.1 Connect Consultants Limited is a firm of transport planning and highway design consultants that have been instructed by Inception (Reading) Sarl (c/o Moorgarth) in relation to their proposed residential development on Broad Street Mall, Reading.

1.2 Site Location

- 1.2.1 The proposal site is located on Broad Street Mall in the centre of Reading, of which the proposed residential developments will comprise five sites.
- 1.2.2 Broad Street Mall includes numerous retail units, office space multi-storey car park and some streetscape / internal thoroughfares. The site is bound to the north by Oxford Road, to the east by St. Mary's Butts, to the south by Hosier Street and Dusseldorf Way and to the west by Queen's Walk, Pentahotel and Queens Court Student Accommodation.
- 1.2.3 The location of the proposal site, in the context of the urban area, is presented at Figure 1.1 below.

Figure 1.1 – Site Location Plan



Source: Promap

- 1.2.4 The site is located in a largely built up urban area, within the centre of Reading, with a number of destinations for everyday activities in close proximity.

1.2.5 A substantial number of retail units, bars and restaurants are located within close proximity of the proposal site, particularly concentrated within Broad Street Mall. Additionally, The Oracle Shopping Centre is located southeast of the site.

1.2.6 Figure 1.2 below identifies the context of the site in relation to the local area.

Figure 1.2 – Site in its Local Context



Source: Google

1.3 Development Proposals

1.3.1 The development proposals are shown on the plan provided at Appendix 1. The proposals include the development of five sites, each of which comprising 1 to 3 bedroom residential units and a small area of retail use which will be ancillary, in transport terms, to the existing Broad Street Mall:

- Site A - Dusseldorf Towers: 172 residential units and a retail use with a Gross Internal Area (GIA) of 172 sq.m.
- Site B - Dusseldorf Towers: 139 residential units and retail use with a GIA of 640 sq.m.
- Site C - Dusseldorf Towers: 99 residential units and retail use with a GIA of 390 sq.m.
- Site D - Quadrant House: 31 residential units.
- Site E - Oxford Road: 52 residential units.
- A total of 24 accessible parking spaces will be provided within the Broad Street Mall car park.

1.3.2 The proposed site access arrangements are also shown on the site layout plan at Appendix 1. A brief description of the site access arrangements is set out below:-

- The following pedestrian accesses will be available for the sites: Site A from Queen's Walk, Site B from Dusseldorf Way, Site C via a separate entrance on Dusseldorf Way, Site D from St. Mary's Butts and Site E from Oxford Road.
- Access to the cycle parking facilities will be via the existing basement.
- Servicing will be via the existing basement.
- As a result of the construction of the development and the provision of 24 accessible parking spaces, the total parking provision in the Broad Street Mall car park will go from 787 spaces to 727 spaces, a reduction of 60 spaces.

1.4 Background and Planning Policy

1.4.1 This report section provides a brief overview of the local and national planning policy context and objectives.

National Planning Policy Framework (NPPF)

1.4.2 The National Planning Policy Framework (NPPF) published in July 2018, sets out the Government's planning policies for England and sets out a framework for local authorities to produce their own local plans.

1.4.3 A key objective at paragraph 18 of the NPPF is the commitment to securing economic growth. Paragraph 19 further emphasises the importance of supporting economic growth through the planning system.

1.4.4 Paragraph 7 of the NPPF highlights that there are three dimensions to providing sustainable development, which includes economic, social and environmental roles. Socially, the residential requirements of a local community should be met by *"accessible local services"*.

1.4.5 Paragraph 29 of the NPPF highlights the needs for a sustainable transport system highlighting that *"the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel"*.

1.4.6 These objectives are reiterated in paragraph 32 which is provided below:-

“All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:-

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- Safe and suitable access to the site can be achieved for all people; and*
- Improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.”*

Core Strategy (adopted 2008, alteration adopted 27th January 2015)

1.4.7 The Core Strategy for Reading Borough sets out the Council's development and planning strategies for the 2022 vision of the town.

1.4.8 In a transport context, new developments in Reading must adhere to Policy CS20, which states that,

“Planning permission will not be granted unless the proposed development contributes appropriately to the provision of a balanced transport network as outlined in the Reading Transport Strategy, including the implementation of the core transport infrastructure projects and area action plans. Such projects and plans will include the provision of measures that make alternatives to the use of private cars (such as walking, cycling and the use of public transport) more attractive, and contribute to improved accessibility and transport safety in accordance with Policy CS4.”

1.4.9 Policy CS4 highlights the importance of the level of accessibility of a new development by a wide choice of transport modes. The Policy is as follows:-

“The scale and density of development within the Borough will be related to its level of accessibility by walking, cycling and public transport to a range of services and facilities. Sites will be assessed in terms of their level of accessibility to a defined district or local centre with a good range of facilities by pedestrian routes, and to a bus stop served by a strategic bus service. Unless it can be demonstrated that the accessibility of a site is to be significantly upgraded, for example, by providing high quality pedestrian routes or providing access to good public transport services, any new development must be at a scale, density and intensity appropriate to that level of accessibility as set out in other policies in this document, other Development Plan Documents or Supplementary Planning Documents.”

Local Transport Plan 3: Strategy 2011 – 2026 (adopted 2011)

- 1.4.10 The Local Transport Plan for Reading Borough (LTP) document is Reading Borough's third Local Transport Plan (LTP3), produced in April 2011. Its purpose is to set out Reading Borough Council's (RBC) Strategy and Implementation Plans for local transport investment for the period 2011 – 2026. The introduction of the plan states:-

"Our LTP Strategy Plan provides the context for Reading in terms of the economy, environment and quality of life. Our long-term vision for transport in Reading is outlined within the context of the Sustainable Community Strategy and its three strands of People, Place, and Prosperity. At the heart of our vision is the aim of better 'Connecting Reading' and a transport system that enables people to move around – easily, safely, sustainably and in comfort."

Reading Central Area Action Plan (adopted 2009)

- 1.4.11 The Reading Central Area Action Plan (RCAAP), adopted by the council in January 2009, is one of the key local plan documents. It sets out the overall strategy for the future of the town centre and identifies specific sites for development. The plan covers the period to 2026.

- 1.4.12 Broad Street Mall is recognised as being a part of the West Side Major Opportunity Area (RC2d, RC2e). The RC2 Policy for developing in this area is as follows:-

"Development in the West Side Major Opportunity Area will:

- i) Contribute towards providing a mix of uses including residential;*
- ii) Help facilitate greater pedestrian and cycle permeability, in particular on key movement corridors and east-west links through the area and between development areas and the station, including improved crossings of the IDR;*
- iii) Safeguard land which is needed for mass rapid transit routes and stops;*
- iv) Provide additional areas of open space where possible, generally in the form of town squares;*
- v) Give careful consideration to the areas of transition to low and medium density residential and conservation areas and protect and, where appropriate, enhance the setting of listed buildings."*

- 1.4.13 Policy RC2d (Broad Street) supports continuing leisure and retail provision of the shopping mall, as well as residential and office development on the upper floors. RC2e (Hosier Street) identifies Hosier Street as being a key corridor of movement within the town centre, recognising its potential for a mix of land uses including residential, retail and new open spaces.

Site and Detailed Policies Document (adopted 2012)

- 1.4.14 The Site and Detailed Policies Document (SDPD) forms part of Reading's Local Development Framework and is read alongside the Core Strategy. The document sets out a range of Borough-wide policies and identifies specific sites and areas that are of particular importance in delivering strategies.

1.4.15 Policy DM12 of the SDPD is concerned with the transport matters associated with new developments:-

"In determining proposals involving a new or altered access onto the transport network, improvement works to the transport network, the creation of new transport infrastructure or the generation of additional trips on the transport network, consideration will be given to the effect on safety, congestion and the environment.

Development will only be permitted where:-

- *Accesses and works to the highway comply with the adopted standards of the Transport Authority 37;*
- *The development would not have a material detrimental impact on the functioning of the transport network;*
- *The proposals would not be detrimental to the safety of users of the transport network, including pedestrians and cyclists;*
- *The proposal would not generate regular movement of heavy goods vehicles (HGVs) on unsuitable roads, or on roads without easy access to the Classified Highway Network; and*
- *For non-residential uses, or new dwellings on classified roads, off-street servicing would be provided.*

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

Revised Parking Standards and Design SPD (adopted October 2011)

1.4.16 Section 3.0 of the Revised Parking Standards and Design SPD covers the required car parking standards for residential dwellings. The standards are 0.5 spaces per 1 or 2 bed flat, and 1 space per 3+ bed flat. The policy also includes the following:

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

1.4.17 As is demonstrated in this report, the development is in a sustainable location with the vast majority of everyday destinations within reach via walking, cycling and public transport. Also, other than accessible spaces for blue badge holders only, the development provides no new car parking and is therefore car free in practicality. On this basis, it is difficult to conclude how the development could result in a detriment to parking related highway safety.

1.4.18 Section 5.0 of the Revised Parking Standards and Design SPD covers the minimum cycle parking standards for residential dwellings. The cycle parking provision for the proposed development is outlined at Section 3.0 of this document.

1.5 Report Overview

- 1.5.1 Pre-application advice from Reading Borough Council (RBC) was received during a meeting on the 10th August 2018. This Transport Assessment (TA) is based on the discussions held at the meeting.
- 1.5.2 The remainder of this report is divided into four further sections, which are as follows:-
- Section 2.0 Site Transport Context
- 1.5.3 This section of the report provides details of the site context, including its accessibility by all relevant transport modes.
- Section 3.0 Proposed Development
- 1.5.4 The various components of the development proposal, including the site access arrangements and parking provision, are described within this section of the report.
- Section 4.0 Traffic Assessment
- 1.5.5 This report section provides an assessment of the vehicular attraction of the proposed development.
- Section 5.0 Summary & Conclusions
- 1.5.6 A summary and the conclusions of the report are provided in this section.

2.0 SITE TRANSPORT CONTEXT

2.1 Introduction

2.1.1 This section of the report considers the accessibility of the site in terms of a range of transport modes.

2.2 Pedestrian Access

2.2.1 The Department for Transport's (DfT) document titled 'Manual for Streets' dated 2007 provides guidance in relation to walk distances. Section 4.4 gives the following advice:-

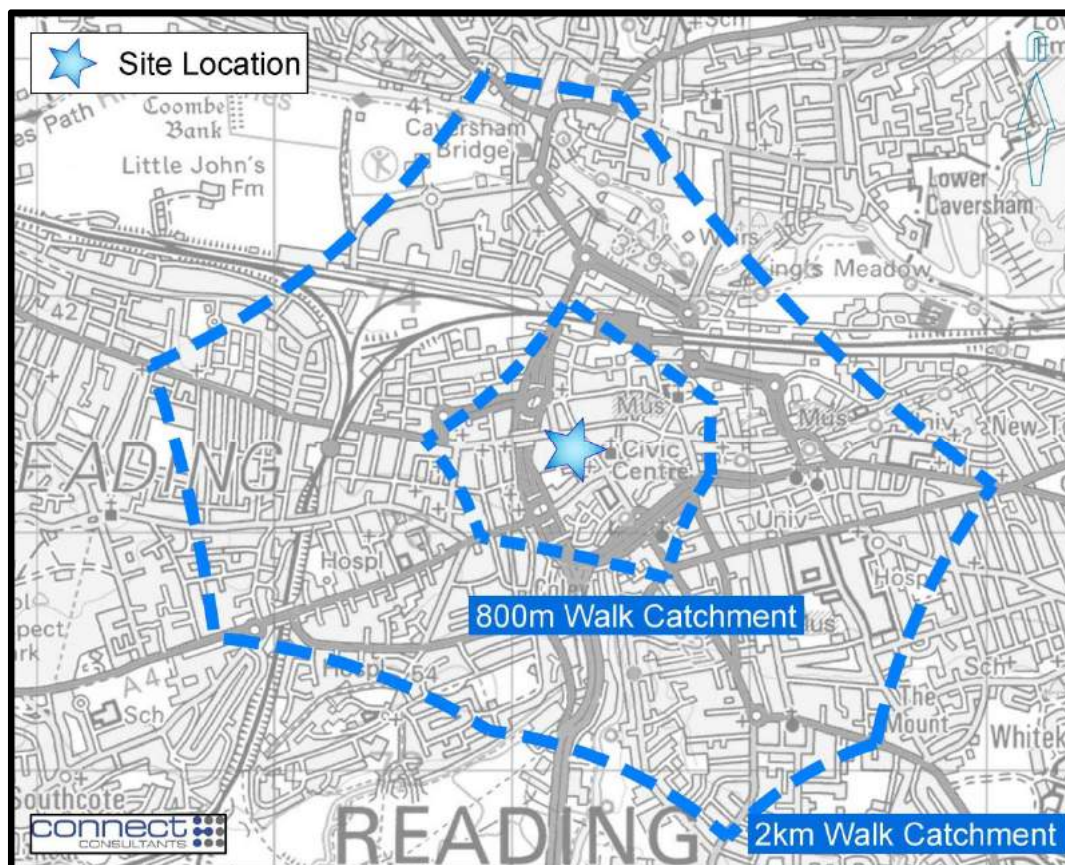
"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot".

2.2.2 Table 3.2 of The Institute of Highways and Transportation (IHT) guidance document titled 'Providing for Journeys on Foot' identifies a maximum walk distance of 2.0km for commuter, school and sightseeing walk trips, 800m for town centre walk trips and 1.2km for trips elsewhere.

2.2.3 The actual distance that people will be prepared to walk will vary depending on the trip purpose and other factors such as the presence of road crossings and terrain.

2.2.4 Based on a maximum walk distance of 800m for visitors and 2km for employees, the approximate walk catchments are shown at Figure 2.1 below.

Figure 2.1 – 800m and 2km Walk Catchment



Source: Promap

- 2.2.5 The walk catchments above indicate that there is a significant built-up area within the walk catchment.
- 2.2.6 Pedestrians are able to access the five proposal sites from ground-floor entrances on Oxford Road, St. Mary's Butts, Hosier Street, Dusseldorf Way and Queen's walk.
- 2.2.7 On its south and west sides, Broad Street Mall is bound by the pedestrianised walkways of Dusseldorf Way and Queen's Walk, respectively. On its north side, the site is bound by Oxford Road and on its east side by St. Mary's Butts, both of which are flanked by existing footways.
- 2.2.8 There is a crossing facility on St. Mary's Butts in the form of a refuge island with dropped kerbs and tactile paving. Crossing facilities are also provided via the Oxford Road / Broad Street / West Street / St. Mary's Butts mini roundabout. Broad Street itself is pedestrianised.
- 2.2.9 Further crossings also include dropped kerbs and tactile paving on Oxford Road and signalised pedestrian crossings on the arms of the St. Mary's Butts / Gun Street / Bridge Street / Castle Street intersection.
- 2.2.10 Additional pedestrian crossing facilities, both signalised and non-signalised, along with pedestrianised areas, are present within the wider area.
- 2.2.11 There are many facilities within walking distance of the site. Table 2.1 below contains a selection of local destinations along with their approximate walk distance from the site.

Table 2.1 – Local Destinations

Destination	Walk distance from the site boundary	Type
The Hexagon	20m	Leisure
Tesco Express	20m	Retail
Reading Minster of St. Mary the Virgin	50m	Religion
Pentahotel	50m	Employment
Reading Magistrates' Court	150m	Employment
St. Mary's Castle Street	150m	Religion
Reading Police Station	150m	Employment
Greyfriars	175m	Religion
Reading Borough Council Building	200m	Employment
The Oracle Shopping Centre	200m	Retail
Sainsbury's Foodstore	240m	Retail
Sainsbury's Foodstore	330m	Retail
Lifespring Church	350m	Religion
Carey Baptist Church	400m	Religion
Chatham Street Surgery	400m	Health
Tesco Express	450m	Retail
Church of S Giles-in-Reading	530m	Religion
Oxford Road Community School	650m	Education
Saint Laurence Church	600m	Religion
Russell Surgery	690m	Health
The Forbury Gardens	700m	Leisure
London Street Surgery	750m	Health
Coley Primary School and Nursery	770m	Education
Civitas Academy	770m	Education

Katesgrove Primary School	800m	Education
Tesco Express	800m	Retail
Victoria Park	800m	Leisure
Abbey Baptist Church	900m	Religion
Coley Park	970m	Leisure
St James R C Church	1km	Religion
Kendrick School	1km	Education
Spire Dunedin Private GP Surgery	1km	Health
King's Meadow	1.1km	Leisure
Kendrick School	1.1km	Education
Deenway Montessori School & Unicity College	1.1km	Education
Christchurch	1.2km	Leisure
The Abbey School	1.5km	Education
Northcroft Leisure Centre	1.5km	Leisure
All Saints Infant School	1.6km	Education
Princes House	1.6km	Health
Pembroke Surgery	1.7km	Health
St John's C of E Primary School	1.7km	Education
Royal Berkshire Hospital	1.8km	Health
The Abbey Junior School	1.8km	Education
Suttons Business Park	2km	Employment
Reading School	2.1km	Education
University of Reading Whiteknights Campus	2.1km	Education
Reading Girls' School	2.6km	Education

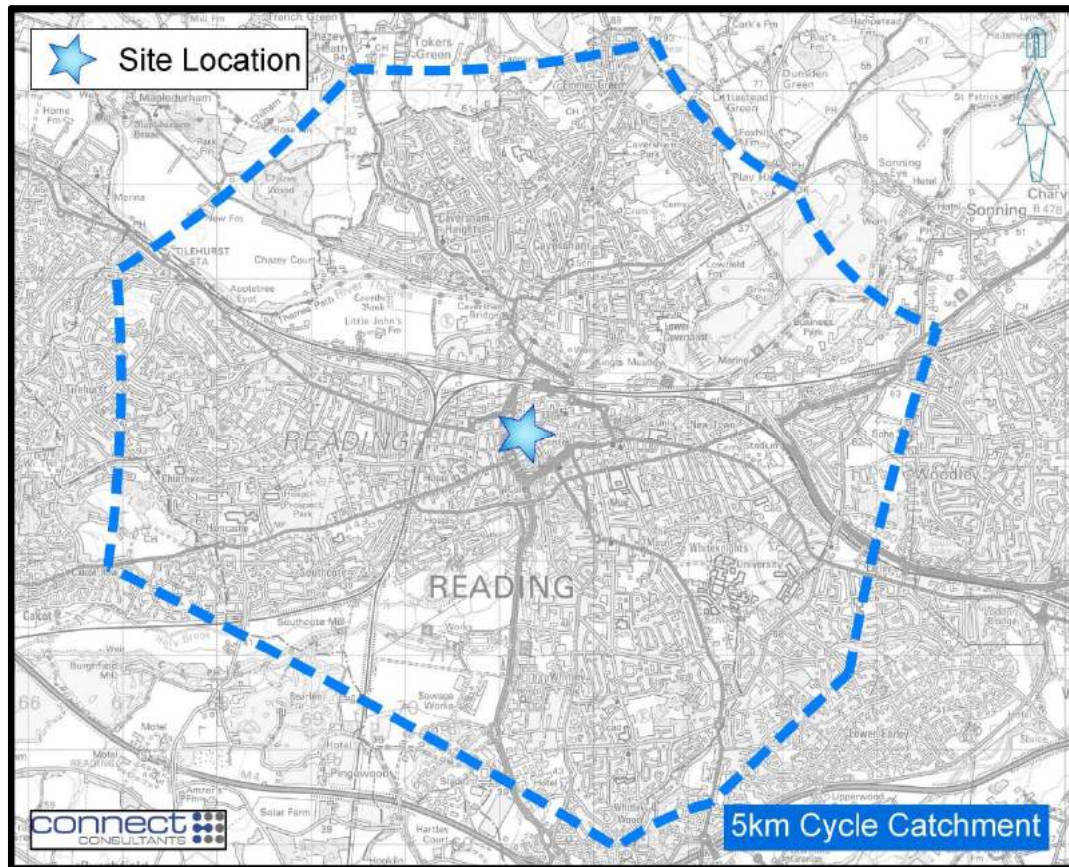
2.2.12 Overall, the centre of Reading, public transport links, schools, medical facilities, employment, leisure and a variety of retail destinations are within easy walking distance of the proposal site, thus making walking a viable and applicable mode of transport to and from the proposal site for the majority of journey purposes.

2.3 Cycling

2.3.1 Sustrans indicate in their 'Travel Behaviour Research Baseline Survey – 2004' under the subheading 'measuring the potential for change' that cycling offers an alternative to car travel, and particularly for trips of less than 6 kilometres. This research is supported by the 2017 National Travel Survey, which specified average journey lengths, by cycle, of c5.5km.

2.3.2 Based on a maximum cycle distance of 5km, the approximate cycle catchment is shown at Figure 2.2 below.

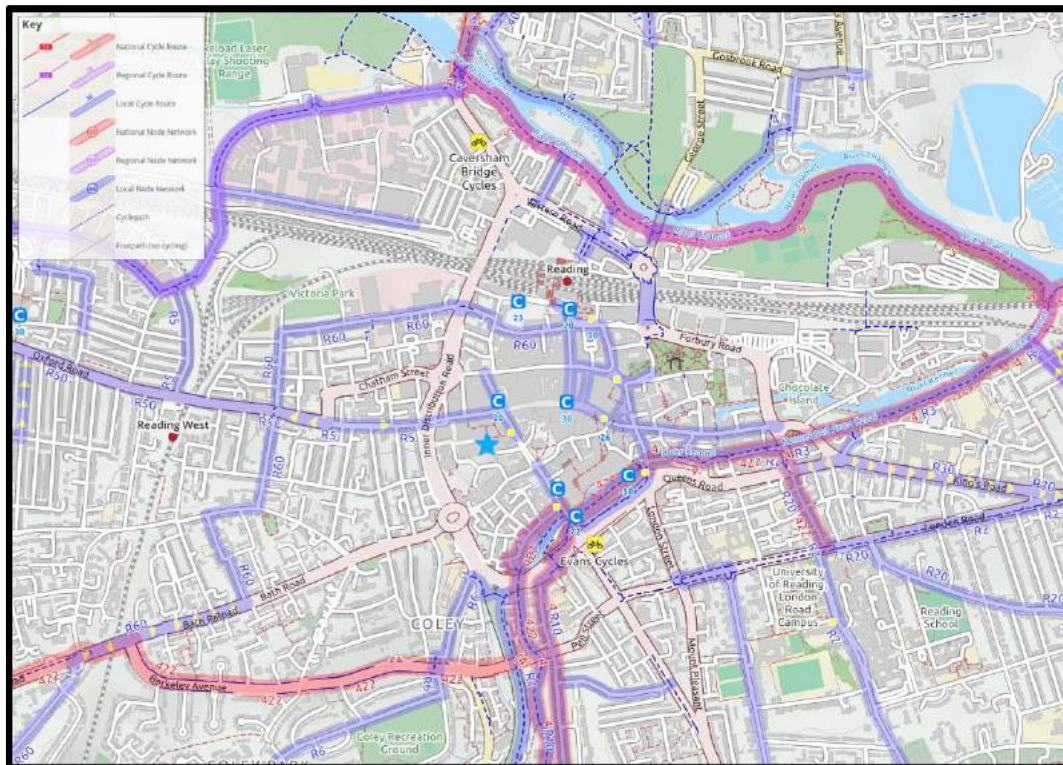
Figure 2.2 – Cycle Catchment Area



Source: Promap

- 2.3.3 The 5km cycle catchment includes much of Reading, including the areas of Caversham, Tilehurst, Southcote, Whitley, Whiteknights, and Woodley. This provides a significant local population within cycle distance of the site.
- 2.3.4 Figure 2.3 below shows a cycle map for Reading and the surrounding areas taken from OpenCycleMap, showing local and national cycle ways in the area.

Figure 2.3 – Cycle Map



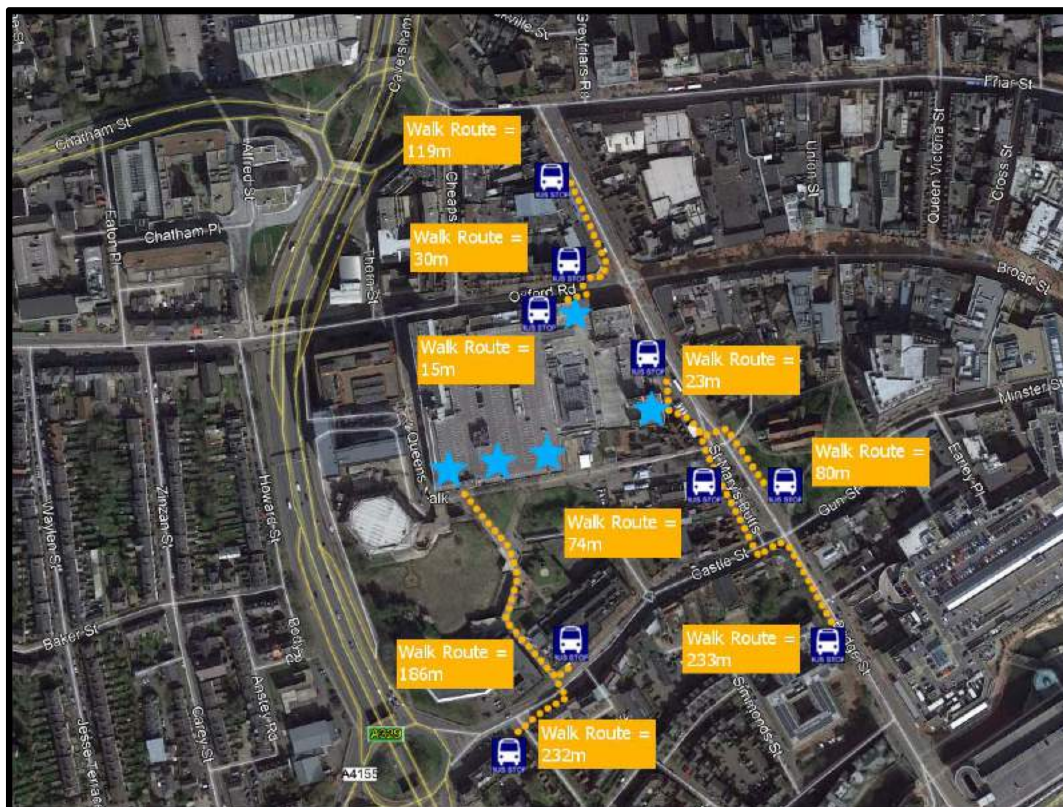
Source: OpenCycleMap. N.B. The proposal site is denoted by a blue star.

- 2.3.5 Local Cycle Route R5 runs along the northern and eastern sides of Broad Street Mall, affording routes into west and south Reading. Other cycle routes surrounding the proposal site include Local Cycle Routes R60 to the north and National Cycle Route 422 to the south.
- 2.3.6 Local cycle routes are also available, allowing for travel within the urban area of Reading.
- 2.3.7 The roads local to the site are urban in character and that the local topography is generally gentle. Overall, cycling offers a viable mode of transport for a variety of journey types and local cycle routes make cycling an attractive transport mode.

2.4 Bus Access

- 2.4.1 The publication 'Planning for Public Transport in Developments' produced by the Institution of Highways and Transportation (IHT) specifies that new developments should be located within 400m of the nearest bus stop.
- 2.4.2 Two bus stops are located adjacent to the east side of Broad Street Mall on St. Mary's Butts. Both stops are served by poles with timetable information and one has a shelter.
- 2.4.3 Further bus stops are located on Oxford Road, West Street, Bridge Street, and Castle Street, all of which lie within the recommended IHT catchment.
- 2.4.4 The above bus stops and their indicative walk routes are shown at Figure 2.4 below.

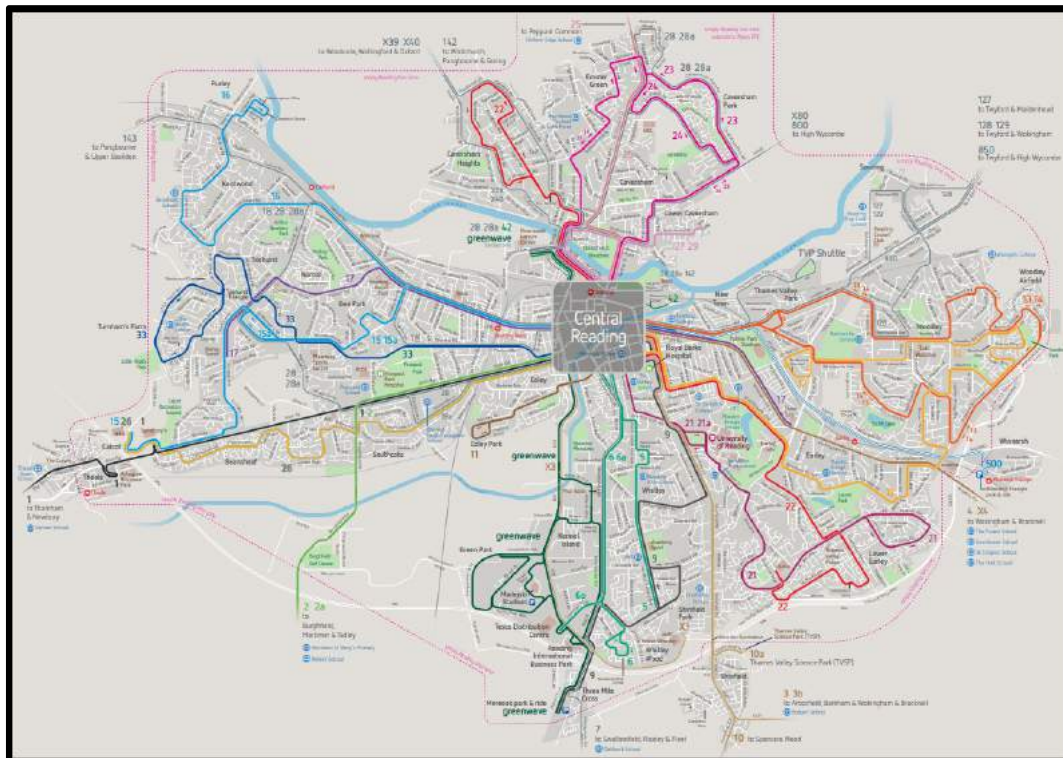
Figure 2.4 – Bus Stop Locations



Source: Google. N.B. All Distances, Locations and Areas approximate. The approximate site locations are denoted by blue stars.

2.4.5 Figure 2.5 below shows a plan of the Reading bus network, illustrating the routes that serve the town centre.

Figure 2.5 – Bus Service Plan



Source: Reading Bus Network Map

- 2.4.6 The bus services shown in the above plan encompass a wide area of Reading, providing numerous and frequent services to and from the town centre. Some bus routes also extend to destinations outside of Reading, including Maidenhead, Wokingham, Bracknell, Oxford and High Wycombe.
- 2.4.7 Having regard to the proximity of the bus stops, the frequency of buses and the areas that the existing local buses serve, the site is accessible by public transport.

2.5 Access by Rail

- 2.5.1 The advice in the Institution of Highways and Transportation's (IHT) publication titled 'Planning for Public Transport in Developments' suggests that railway stations have a walk catchment of 800m.
- 2.5.2 The closest railway station is Reading station, c575m walk distance from the site and inside the IHT catchment. The location of the train station and its indicative walk route to and from the site is shown at Figure 2.6 below.

Figure 2.6 – Reading Station Walk Route



Source: Google. N.B. the northeast site boundary has been denoted by a blue star.

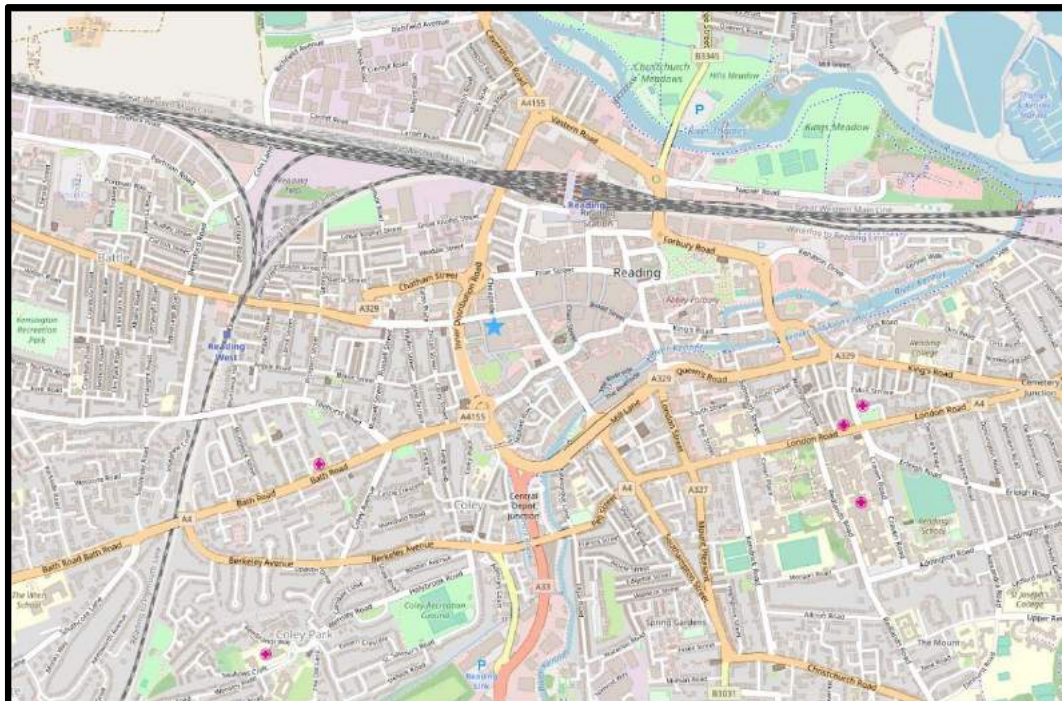
- 2.5.3 Reading Station links to a host of locations including London, Oxford, Wokingham, Didcot and Swindon, with a high frequency of services.
- 2.5.4 The site therefore benefits from access to the mainline rail network.
- 2.5.5 On the above basis, the proposal site is accessible by rail.

2.6 Highways Access

- 2.6.1 For those wishing to visit the site by car, there are existing public car parking provisions within close proximity, for example the Broad Street Mall car park.
- 2.6.2 Oxford Road, St. Mary's Butts, and Castle Street surround the site and join onto the A329.
- 2.6.3 The A329 is also directly accessible from Broad Street Mall main car park via a slip road west of the site. Alternatively, the A329 is accessible via the Chatham Street / Friar Street / A329 slip roundabout c130 north of the site or via the Castle Street / Castle Hill / A329 slip roundabout c350m south of the site. The A329 functions as part of the Reading Inner Distribution Road (IDR), which comprises mostly of dual carriageway that encircles the town centre.
- 2.6.4 The A33 is accessed approximately 430m south of the site, providing a route into south Reading and Basingstoke c27km south.
- 2.6.5 The M4 is accessed via the A329 and the A33 approximately 5km south of the proposal site. The M4 provides direct routes into Maidenhead, Slough and London to the east.

- 2.6.6 Overall, the site has a prominent location in relation to the local road network from which it is readily accessible, as shown at Figure 2.7 below.

Figure 2.7 – Highway Network



Source: OpenStreetMap. N.B. the site has been denoted by a blue star.

2.7 Access to Facilities

- 2.7.1 The Department for Transport (DfT) publish annual estimates of travel times from where people live to key local services including primary schools, secondary schools, GPs, hospitals, food stores, town centres, sports participate and employment centres. These are known as the Journey Time Statistics (JTS) series, the latest set were recorded in 2016 (published in May 2018).
- 2.7.2 The statistics are published at national, regional, local authority and small area (Lower Super Output Area) level, for the eight key local services presented above, and for the following three modes of transport; public transport / walking, cycle and car.
- 2.7.3 The 2016 JTS “cycle time” has been converted to distance using the assumption that average cycle speed is 16 km/h. This is the most common cycle speed input to the program used when calculating the JTS.
- 2.7.4 The accessibility distance has been calculated by multiplying the average minimum cycle time (in minutes) presented at Table JTS0101 by 16 (km) and dividing by 60 (1 hour) to give the average distance.

2.8 Access to Employment

- 2.8.1 The 2016 JTS average distance to the nearest employment centre (providing 100-499 jobs) is 2.4 km, based on Table JTS0101.
- 2.8.2 The key employment destinations close to the site include the following:
- The Centre of Reading
 - The Oracle Shopping Centre (200m)

- Suttons Business Park (2km)

2.8.3 All of the above employment destinations are located within the average 2016 JTS distance; therefore residents of the proposed development will benefit from being closer to their nearest employment centre than the average resident of England. Note: It is unknown how many staff the above employment destinations employ.

2.9 Access to Education

2.9.1 The statutory maximum walking distance for primary school pupils is two miles (3.2km), for secondary school pupils, the distance is 3 miles (4.8km). Data from the National Travel Survey¹ shows that the proportion of primary pupils walking to school decreases sharply for trip lengths in excess of 1 mile (1.6km). Table 2.2 below contains a summary of National Travel Survey (NTS) Table 0614, "trips to school by main mode, trip length and age".

Table 2.2 – NTS 0614 Summary

Age Group	Mode \ Distance	<1 mile (%)	1-2 miles (%)	2-5 miles (%)	5+ miles (%)
5-10 years	Walk	78	26	-	0
	Bicycle	2	1	-	0
	Car/van	20	65	80	84
	Bus	0	6	18	13
	Other	0	1	1	3
11-16 years	Walk	87	57	8	-
	Bicycle	3	5	2	0
	Car/van	8	26	42	22
	Bus	2	11	44	62
	Other	-	1	5	16

2.9.2 The JTS average distance to the nearest primary school is 2.3 km, and for the nearest secondary school, the JTS average distance is 3.7 km.

2.9.3 The closest primary school to the site is Oxford Road Community School, which is approximately 650m from the site. The school is within the recommended walking distance for children of primary school age, as well as being within the distance where 80% of trips to school by 5-10 year olds are made by non-car modes.

2.9.4 The closest secondary school is Civitas Academy, which is approximately 770m from the site. The school is within the statutory walking distance for children over the age of 11. Combining the data from NTS table 0614 for school journeys less than 1 mile being undertaken by 11-16 year olds results in 92% of trips being undertaken using non-car modes.

2.10 Access to Other Facilities

2.10.1 The 2016 JTS average distance to the nearest Town Centre is 4.6km. The site is situated in Reading Town Centre and contains a variety of retail attractions in addition to a range of restaurants and other leisure facilities.

2.10.2 The 2016 JTS average distance to the nearest foodstore is 2.3km, the Tesco Express on Oxford Road is located c20m from the proposed site boundary and therefore within the JTS

¹ Table 0614 'trips to school by main mode, trip length and age', National Travel Survey, 2015. The 2015 dataset is the latest release with Table 0614 included.

average distance. A Sainsbury's foodstore is located c240m from the site, also all within the JTS average distance.

2.10.3 The 2016 JTS average distance to the nearest GP Surgery is 2.6km; Chatham Street Surgery is 400m from the site, within the 2016 JTS average distance.

2.10.4 The 2016 JTS average distance to the nearest hospital is 9.2km; Royal Berkshire Hospital is approximately 1.8km from the site, within the JTS average distance.

2.10.5 Northcroft Leisure Centre is located an approximate 1.5km walk from the site boundary, meaning it is accessible by foot and cycle. Although JTS does not include leisure, NTS Table 405 indicates that the average distance travelled for the purpose "sport: participate" was 9.8km in 2016.

2.11 Section Conclusion

2.11.1 The proposal site is surrounded by a pedestrian network that includes a number of crossing facilities, and a residential catchment within walking distance of the site. Reading and the surrounding area is conducive to cycling and the bus stops local to the site are served by frequent bus services, which provide access to / from a wide variety of destinations. The proposal site also has a prominent location relative to the local highway network. Overall, the site has a good level of accessibility by all relevant transport modes.

3.0 PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 The development proposals are shown on the plan provided at Appendix 1. The proposals include the development of five sites, each of which comprising 1 to 3 bedroom residential units:

- Site A - Dusseldorf Towers: 172 residential units and a retail use with a Gross Internal Area (GIA) of 172 sq.m.
- Site B - Dusseldorf Towers: 139 residential units and retail use with a GIA of 640 sq.m.
- Site C - Dusseldorf Towers: 99 residential units and retail use with a GIA of 390 sq.m.
- Site D - Quadrant House: 31 residential units.
- Site E - Oxford Road: 52 residential units.
- A total of 24 accessible parking spaces will be provided within the Broad Street Mall car park.

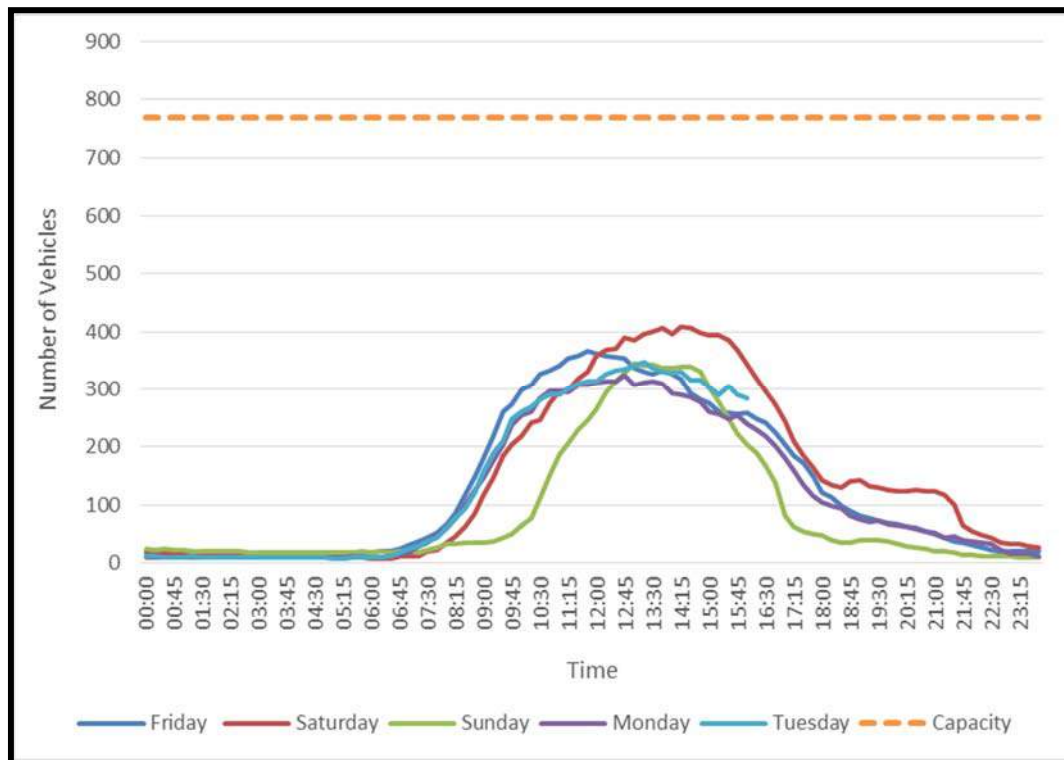
3.2 Proposed Site Access Arrangements and Parking

3.2.1 The proposed site access arrangements are also shown on the site layout plan at Appendix 1. A brief description of the site access arrangements is set out below:-

- The following pedestrian accesses will be available for the sites: Site A from Queen's Walk, Site B from Dusseldorf Way, Site C via a separate entrance on Dusseldorf Way, Site D from St. Mary's Butts and Site E from Oxford Road.
- Access to the cycle parking facilities will be via the existing basement.
- Servicing will be via the existing basement.
- As a result of the construction of the development and the provision of 24 accessible parking spaces, the total parking provision in the Broad Street Mall car park will go from 787 spaces to 727 spaces, a reduction of 60 spaces.

3.2.2 A survey of the Broad Street Mall car park has been undertaken from Friday 7th July to Tuesday 11th July 2017 inclusive. The survey recorded a maximum occupancy of 409 vehicles which occurred on Saturday 8th July at 14:15 hrs. On this basis, the reduction in number of spaces is unlikely to have a detrimental effect on the operation of the existing car park. Figure 3.1 below shows the car park survey data.

Figure 3.1 – Car Park Accumulation



3.2.3 The cycle parking standards for residential developments are outlined in the RBC document 'Revised Parking Standards and Design SPD' (adopted October 2011) and indicate 0.5 spaces for each 1 to 2 bedroom dwelling and 1 space per 3 bedroom dwellings. The proposed parking provision for each site accords with local standards and are detailed as follows:

- Site A - Dusseldorf Towers: 87 spaces.
- Site B - Dusseldorf Towers: 71 spaces.
- Site C - Dusseldorf Towers: 51 spaces.
- Site D - Quadrant House: 21 spaces.
- Site E - Oxford Road: 30 spaces.

3.3 Servicing

3.3.1 The existing basement level provides service access to Broad Street Mall. The proposed development will also be serviced from the basement level as shown on the swept path analysis plan included at Appendix 1.

3.3.2 The basement is accessed via the A329 to the west of the site, and via Castle Street to the south of the site.

3.3.3 Calculations prepared by the project architect indicate that refuse will be contained within approximately 50 no 1100 litre bins which will be collected weekly. Assuming the collection vehicle has a capacity of 15 – 27 cubic metres, and without accounting for refuse compaction, if every bin is filled every week this equates to approximately 2-4 refuse collections per week.

3.4 Section Conclusion

- 3.4.1 Pedestrian access to the proposed developments will be via entrances on Queen's Walk, Dusseldorf Way, St. Mary's Butts and Oxford Road.
- 3.4.2 Other than 24 car parking spaces for blue badge holders, there will be no new car parking for residents of the proposed development. Residents and visitors travelling by car will need to use existing nearby parking facilities.
- 3.4.3 The development will result in a reduction of number of parking spaces in the Broad Street Mall car park by 60. Surveys undertaken in July 2017 indicate that such a reduction is unlikely to have any material effect on the operation of the car park.
- 3.4.4 Access to the cycle parking will be via the existing basement.
- 3.4.5 The proposed development will be serviced via the existing basement.

4.0 TRAFFIC ASSESSMENT

4.1 Introduction

- 4.1.1 Although the proposed development is in a sustainable location, includes no new car parking provision (other than 24 spaces for blue badge holders) and is expected to be car free in practicality, traffic analysis has been undertaken to quantify the potential traffic effect of the development if it were to have the traffic effect of a TRICS average residential development in this location.
- 4.1.2 This report considers the peak periods during which the study area has been surveyed to be subject to the highest level of traffic flow. For this TA, the peak periods are as set out below:-
- 1) Weekday AM Peak – 07:30-08:30
 - 2) Weekday PM Peak – 16:30-17:30

4.2 Existing Traffic Flows

- 4.2.1 Details of the existing traffic flows have been acquired from manual traffic count surveys of the Chatham Street / Friar Street / A329 slip roundabout, the Castle Street / Castle Hill / A329 slip roundabout and the Broad Street Mall access on the A329. The surveys were conducted on 28th June 2018 between the hours of 07:00 – 10:00 and 16:00 – 19:00 to capture the weekday morning and evening peak periods.
- 4.2.2 Diagrams indicating the June 2018 peak hour traffic flows are provided at Appendix 2.

4.3 Base Year Traffic Flows

- 4.3.1 The assessment will be based on a future assessment year of 2023 (Application year + 5 years). Growth factors have been applied to the June 2018 traffic flows at Appendix 2 to represent the future year to account for projected economic growth and local development forecasts.
- 4.3.2 The growth factors have been derived based on the TEMPRO version 7.3 database for the period 2018 and 2023. This has been adjusted based on the TEMPRO output for car drivers for the geographical area of “Reading 011” (with area type “Urban” and road type “All”) and the results of the assessment are summarised below at Table 4.1.

Table 4.1 – TEMPRO Growth Rates

Peak Period	2018 to 2023
	Resultant Growth
AM	1.0819
PM	1.0756

- 4.3.3 Full details of the TEMPRO assessment are contained at Appendix 3. The calculated TEMPRO growth factors have been applied to the June 2018 surveyed flows shown at Appendix 2. The 2023 Base traffic flows are shown at Appendix 4.

4.4 Proposed Taxi Traffic Generation

- 4.4.1 Due to the central location of the development within Reading and the wide accessibility of alternative non-car transport options it seems likely that there will be a negligible traffic effect in terms of private cars as a result of the development.

- 4.4.2 Alternative transport options surrounding the site include numerous bus services, rail services north of the site, roads conducive to cycling, and a substantial pedestrian network. Therefore this section of the traffic assessment has been limited to taxi traffic.
- 4.4.3 The TRICS database (version 7.5.3) has been used to calculate the traffic effect using the category 'Flats Privately Owned' for surveyed sites in England, surveyed from 1st January 2010 to 3rd July 2018. Only taxi traffic has been selected within 'Town Centre' sites surveyed multi-modally on a weekday.
- 4.4.4 The resultant trip generation for taxis, during the peak hours, is set out at Table 4.2 and full TRICS outputs are provided at Appendix 5.

Table 4.2 – TRICS Data – Taxis, Flats Privately Owned

Peak Hour	Average Taxi Trip Rates			Residential Trip Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.002	0.003	0.005	1	1	2
PM	0.003	0.000	0.003	1	0	1

4.5 Theoretical Residential Traffic Effect

- 4.5.1 An assessment of the potential car traffic effect of the development has been conducted based on a theoretical number of private cars that could be generated by the development. A theoretical number of OGVs has also been assessed.
- 4.5.2 The TRICS database (version 7.5.3) has been used to calculate the traffic effect using the category 'Flats Privately Owned' for sites in England, surveyed from 1st January 2010 to 3rd July 2018. Vehicles and OGV traffic has been selected within 'Town Centre' sites surveyed multi-modally on a weekday.
- 4.5.3 The resultant trip generation for private vehicles, during the peak hours, are set out at Table 4.3 and full TRICS outputs are provided at Appendix 5.

Table 4.3 – TRICS Data – Vehicles, Flats Privately Owned

Peak Hour	Average Vehicle Trip Rates			Residential Trip Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.022	0.043	0.064	11	21	32
PM	0.054	0.032	0.086	27	16	42

- 4.5.4 The resultant trip generation for OGVs, during the peak hours, are set out at Table 4.4 and full TRICS outputs are provided Appendix 5.

Table 4.4 – TRICS Data – OGVs, Flats Privately Owned

Peak Hour	Average Vehicle Trip Rates			Residential Trip Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.002	0.002	0.003	1	1	1
PM	0.002	0.002	0.003	1	1	1

- 4.5.5 The distribution of the development trips is based on broad assumptions of the existing local traffic network. The distribution percentages of the trips on the major roads surrounding the site are outlined below at Table 4.5.

Table 4.5 – Development Trips Distribution

Road	%age
A329 Caversham Road (North)	20%
Chatham Street	10%
A4155 Castle Hill	10%
A33	35%
A329 (East)	10%
Southampton Street	15%

- 4.5.6 Diagrams presenting the development traffic on the highway network are provided at Appendix 6.

4.6 Net Development Effect

- 4.6.1 The net traffic effect of the proposed development based on the above assumptions is shown on diagrams at Appendix 6 and summarised at below.

Table 4.6 – Net Traffic Effect

Junction	AM Peak	PM Peak
A329 / Chatham Street / Friar Street Roundabout	9	13
A329 / Castle Street / Castle Hill	24	28
Broad Street Mall A329 Entry / Exit	24	24
Broad Street Mall Entry / Castle Street	7	19

N.B. Some mathematical rounding has taken place.

- 4.6.1 The net traffic effect of the proposed development has been combined with the 2023 base flows at Appendix 4 to provide the scenario with the proposed development for the 2023 assessment year. The 2023 + Proposed Development flows are shown on the diagrams at Appendix 7.
- 4.6.2 Based on the negligible traffic effects of the development, junction capacity and road collisions have not been analysed.

4.7 Section Conclusions

- 4.7.1 The potential theoretical increase to traffic due to the proposed residential development has been calculated based on data from the TRICS database.
- 4.7.2 The assessment shows that the potential increase to traffic will be negligible at all junctions within the study area.

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary

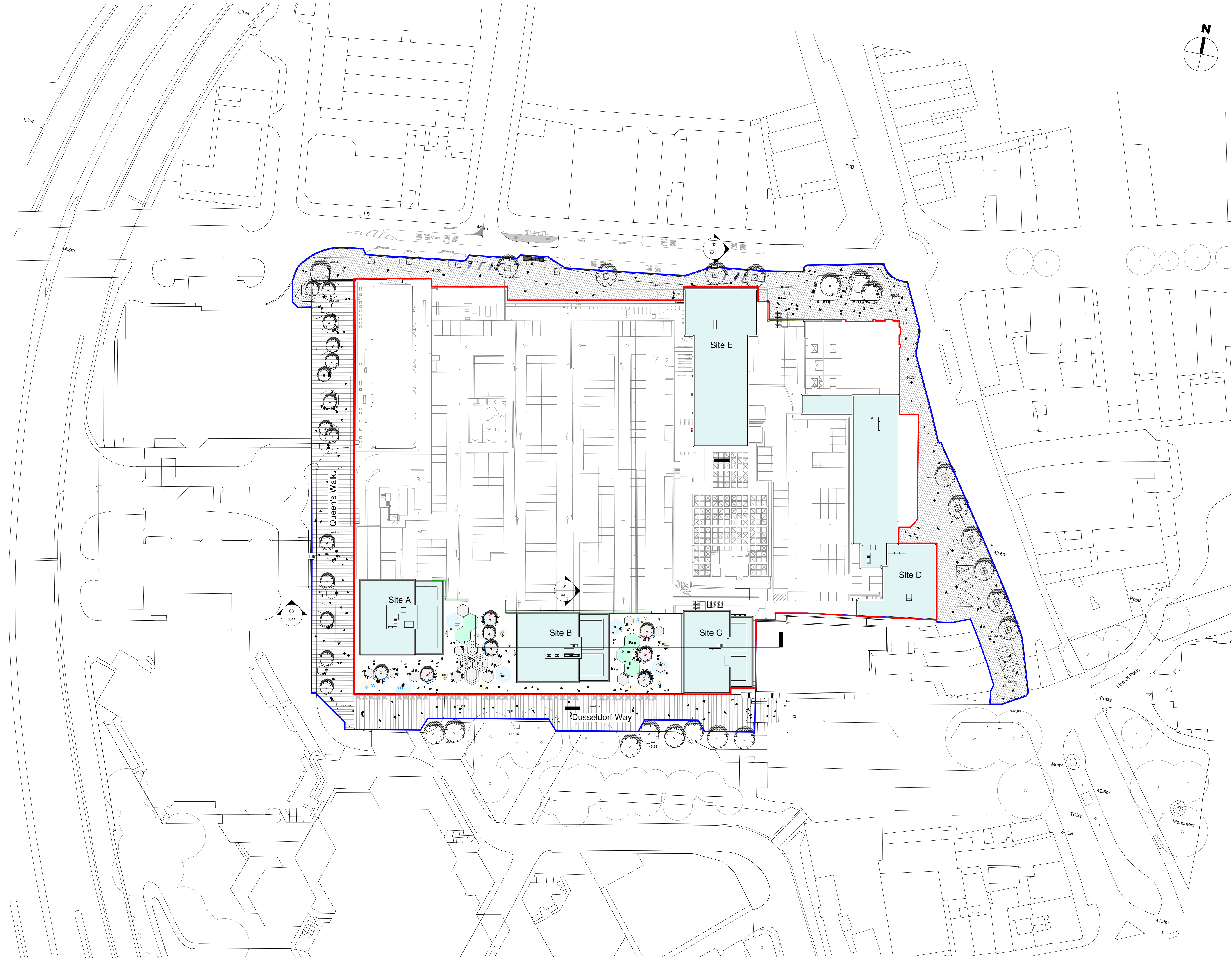
5.1.1 Connect Consultants Limited is a firm of transport planning and highway design consultants that have been instructed by Inception (Reading) Sarl (c/o Moorgarth) in relation to the proposed residential development at Broad Street Mall in Reading. The report is summarised as follows:-

- The site is accessible by a choice of travel modes and will reduce reliance on the private car consistent with national and local planning policy.
- The proposed development is suitable in terms of its access arrangements, composition and layout.
- The development will be serviced via the existing service arrangements for Broad Street Mall.
- The traffic assessment included in this report is based on a realistic traffic impact scenario and demonstrates the development traffic effects will be negligible.
- Based on the negligible traffic effects of the development, junction capacity and road collisions have not been analysed.

5.2 Conclusions

5.2.1 The results of this assessment highlight that the proposed development is acceptable from a transport perspective.

APPENDIX 1 – SITE LAYOUT AND SWEEP PATH ANALYSIS



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NOTES:

for Landscaping details please refer to
MACGREGOR SMITH drawings;

— Ownership Boundary
— Application Boundary

B	Position of Tower C updated	25.10.18	DS	RBJ
A	Macgregor Smith information implemented	28.09.18	DS	RBJ
Rev	Description	Date	Dr by	App by

Project Stage

INFORMATION

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MOORGARTH

Project:
BROAD STREET MALL, READING

Drawing Title:
Masterplan - Site Plan

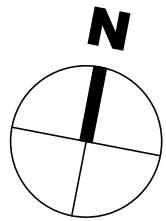
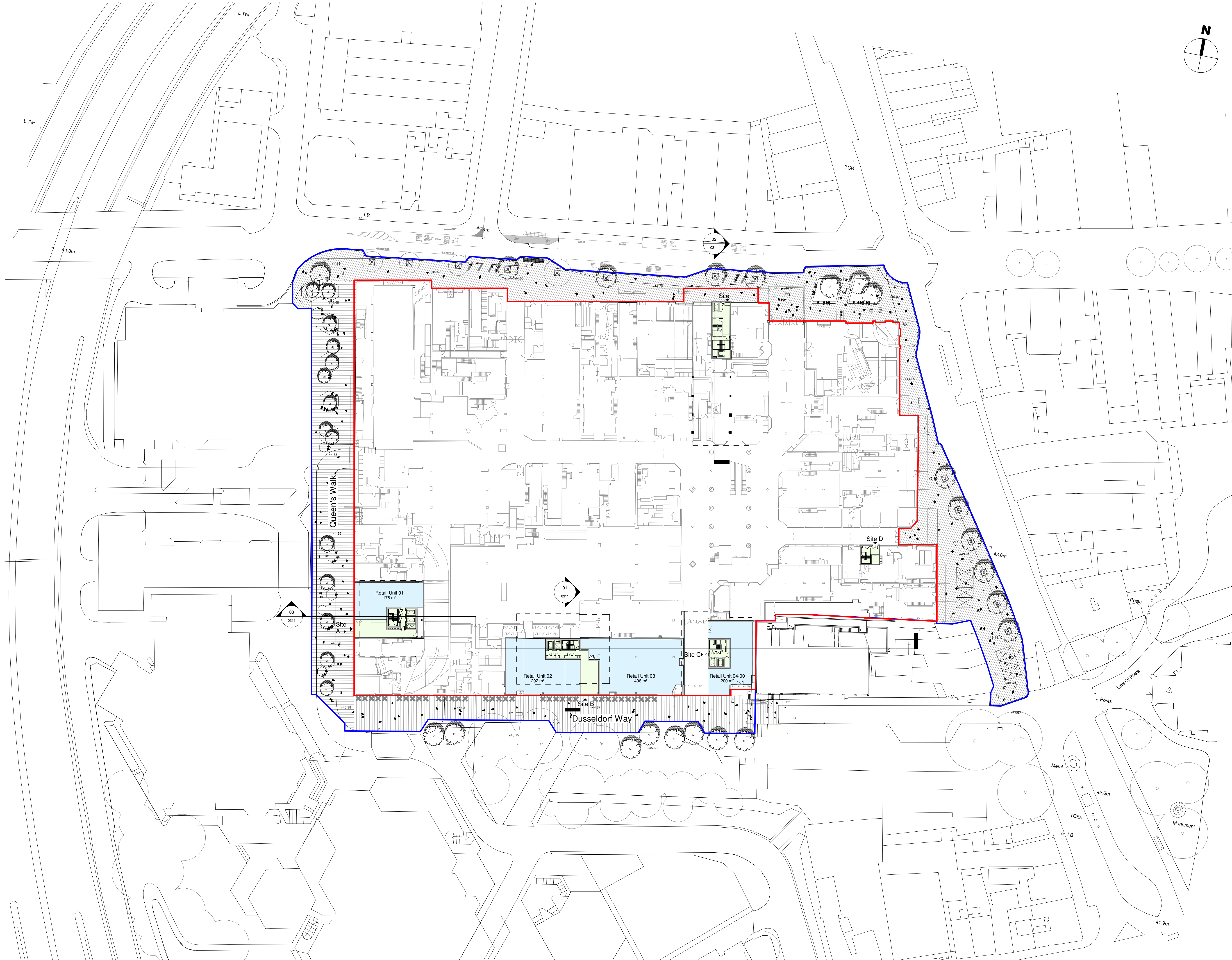
Drawn	Checked	Paper Size	Scale	Date
DS	RBJ	A1	1 : 500 @A1	09/14/18
Project No.	Drawing No.	Revision		
16428	2000	B		

Drawing BIM Name:		
CDE Area:	Suitability Code:	BIM Revision:
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NOTES:
for Landscaping details please refer to
MACGREGOR SMITH drawings;

- Ownership Boundary
- Application Boundary

Room Legend

- Retail Unit
- Residential Entrances

A	Position of Tower C updated	25.10.18	DS	RBJ
Rev	Description	Date	Dr	App by

Project Stage

INFORMATION

Client:

MOORGARTH

Project:

BROAD STREET MALL, READING

Drawing Title:

Masterplan - Ground Floor

Drawn	Checked	Paper Size	Scale	Date
DS	RBJ	A1	1 : 500 @A1	09/27/18

Project No.	Drawing No.	Revision
16428	2001	A

Drawing BIM Name:

CDE Area:	Suitability Code:	BIM Revision:
		-

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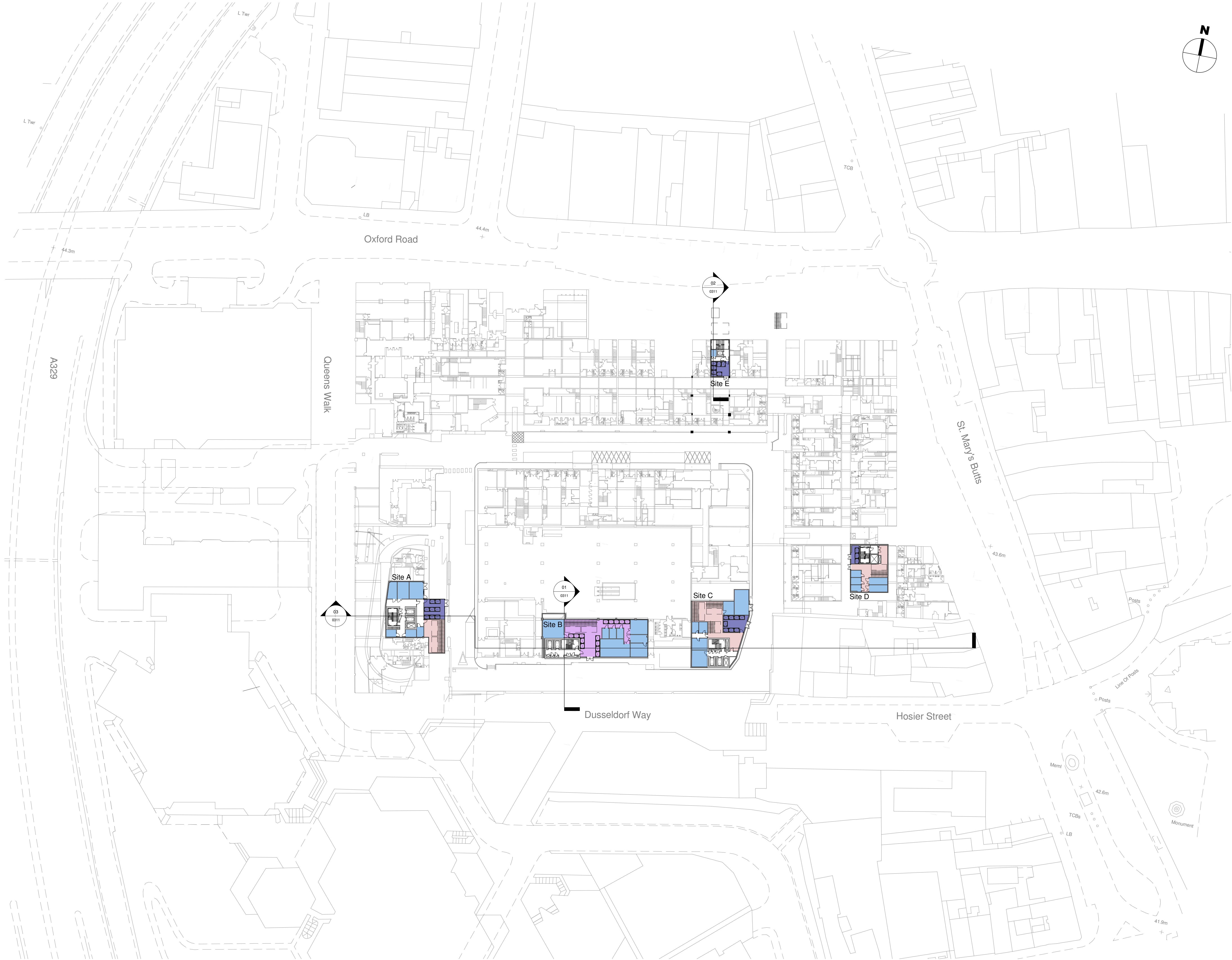
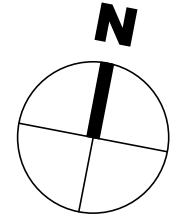
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NOTES:

Key

- BIN AND CYCLE STORAGE
- BIN STORAGE
- CYCLE STORE
- PLANT



A	Position of Tower C updated	25.10.18	DS	RBJ
Rev	Description	Date	Dr by	App by

Project Stage

INFORMATION

Client:

MOORGARTH

Project:

BROAD STREET MALL, READING

Drawing Title:

Masterplan - Basement

Drawn	Checked	Paper Size	Scale	Date
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Project No.	Drawing No.	Revision
16428	2006	A

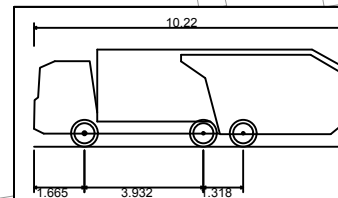
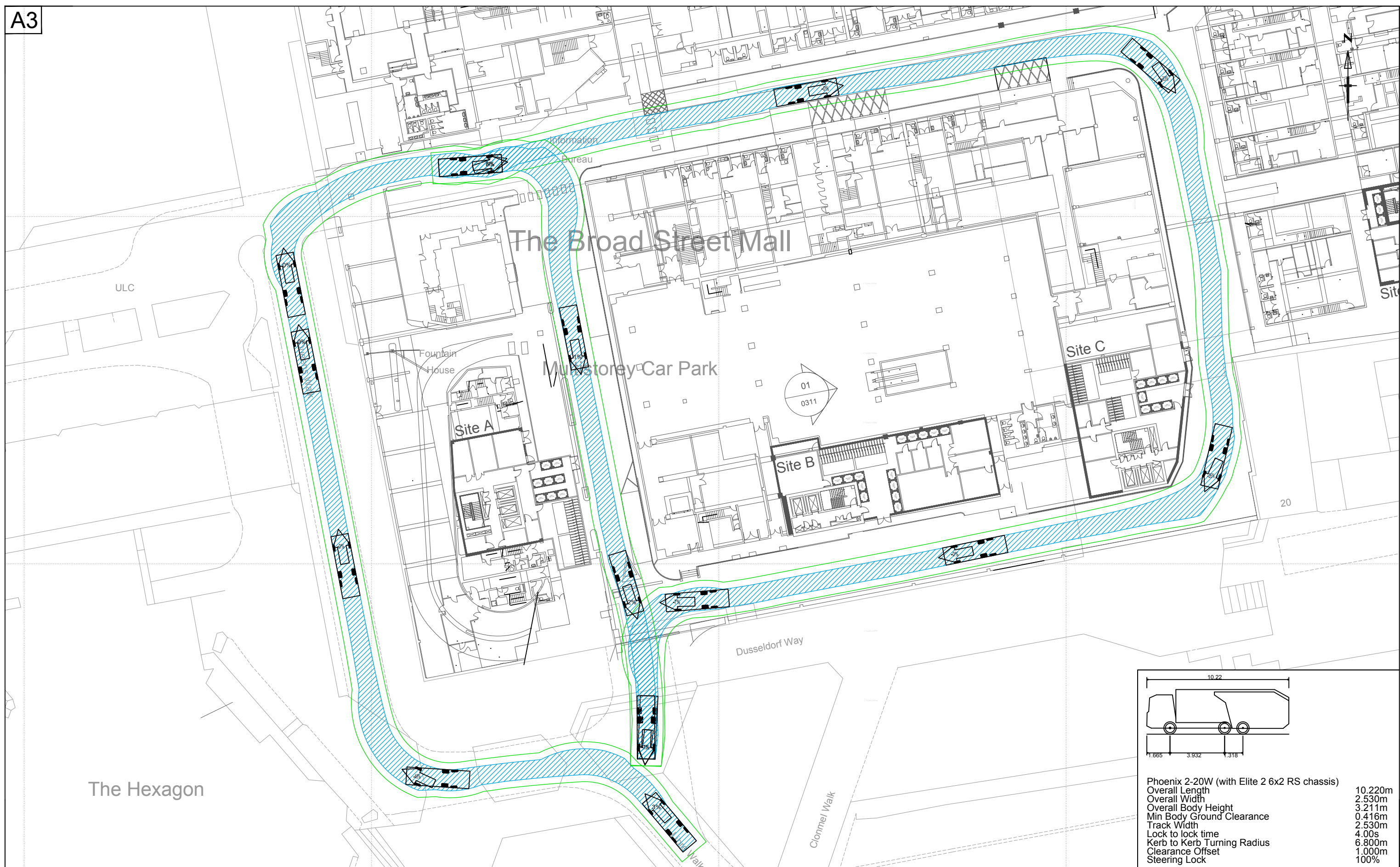
Drawing BIM Name:

CDE Area:	Suitability Code:	BIM Revision:
-	-	-

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Phoenix 2-20W (with Elite 2 6x2 RS chassis)	
Overall Length	10.220m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.800m
Clearance Offset	1.000m
Steering Lock	100%

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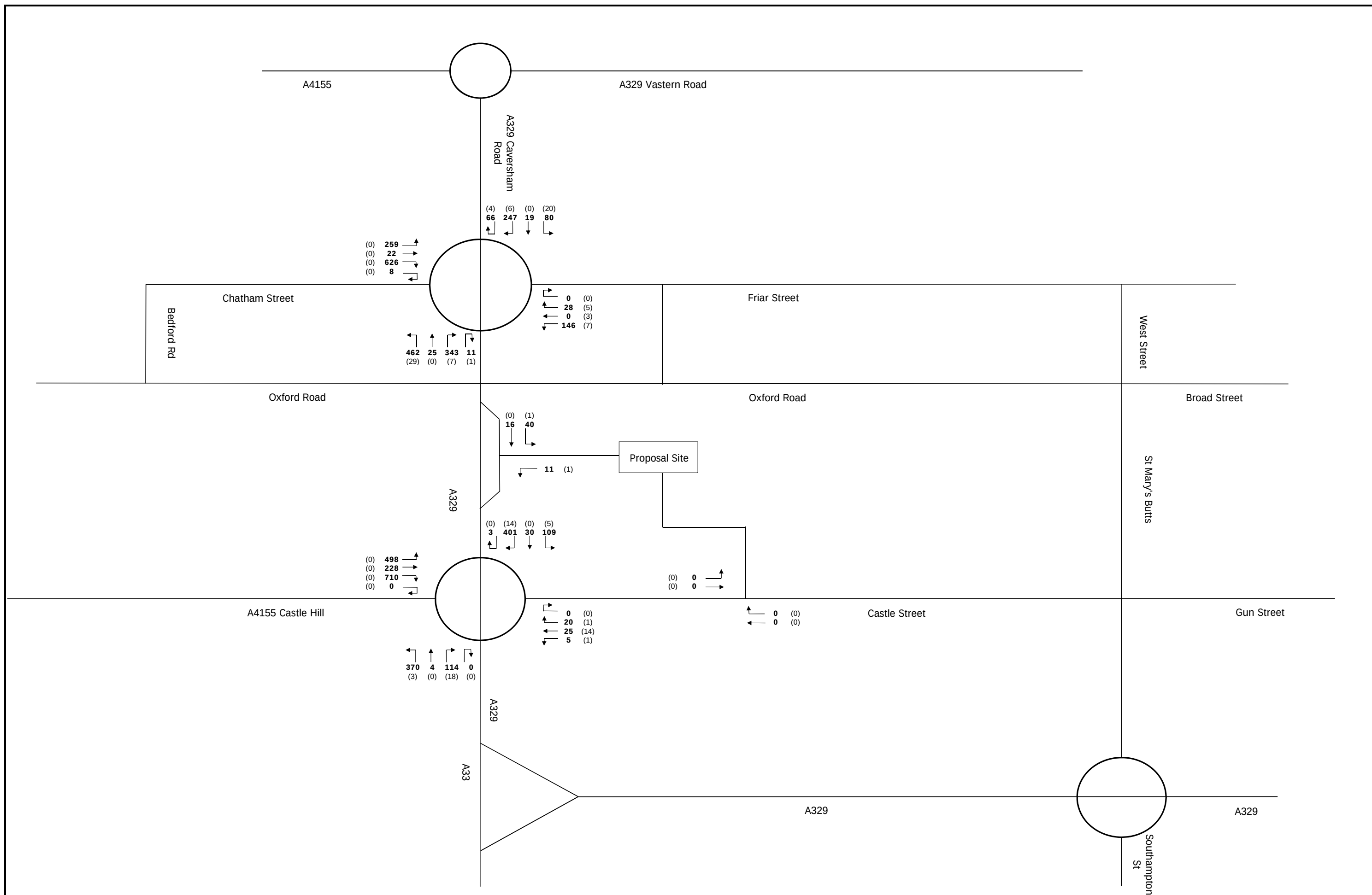
client
INCEPTION (READING) SARL (C/O MOORGARTH)

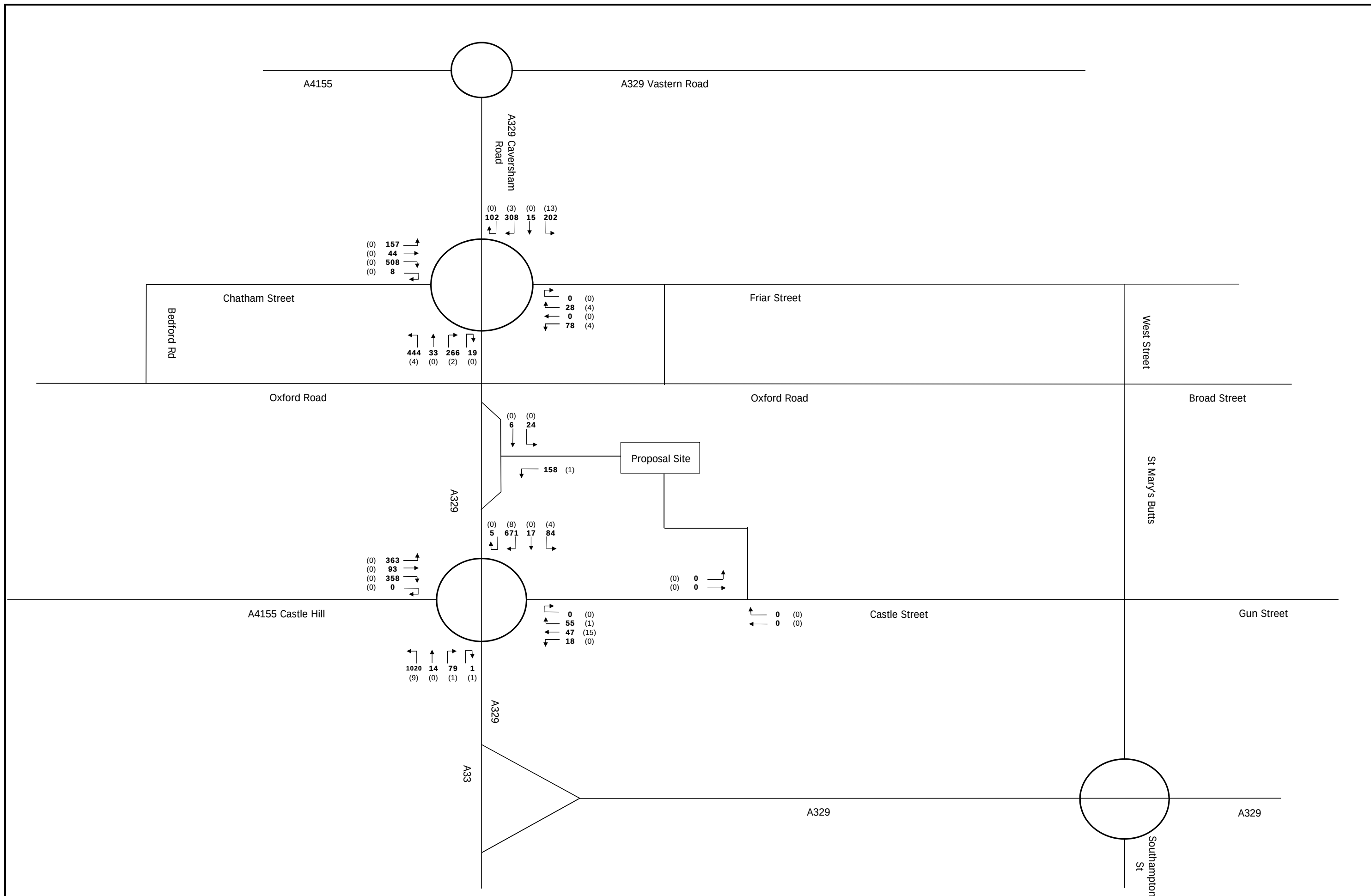
project
PROPOSED DEVELOPMENT
READING, BROAD STREET MALL

title
SWEEP PATH ANALYSIS
PHOENIX 2-20W (WITH ELITE 2 6x2 RS CHASSIS)

date NOVEMBER 2018	drawn by B.W.L	checked by H.A.F
scale 1:500	status PLANNING	
drawing number 16034 - TR002	rev. --	

APPENDIX 2 – SURVEYED TRAFFIC FLOWS





APPENDIX 3 – TEMPRO ASSESSMENT

ASSESSMENT OF TRAFFIC GROWTH

TEMPRO DATABASE

10TH OCTOBER 2015

1.0 - Introduction

This technical note has been produced to set out the methodology used to determine traffic growth factors for the following geographical area:-

Geographical Area	Reading 011
--------------------------	-------------

2.0 - Method

Use of the TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to surveyed traffic movements in order to estimate the number of vehicles using roads and junctions at a future assessment year.

The TEMPRO software provides a local adjustment to the National Trip End Model (NTEM) to determine localised growth factors for geographical areas and this assessment is based on the following TEMPRO datasets (NTEM) and National Transport Model Forecasts (NTM) forecasts:-

	Version	Notes
TEMPRO Software	6.2	This is the most recent version of the TEMPRO database produced in December 2009
TEMPRO Dataset	NTEM 6.2	This is currently the definitive TEMPRO NTEM dataset for use. (http://www.dft.gov.uk/tempo)
NTM Model	National Transport Model Forecasts 2009 (2003 – 2035)	NTM Forecasts are produced yearly and this is the most recent dataset released March 2010.

3.0 - TEMPRO Parameters

The assessment is based on the following TEMPRO parameters:-

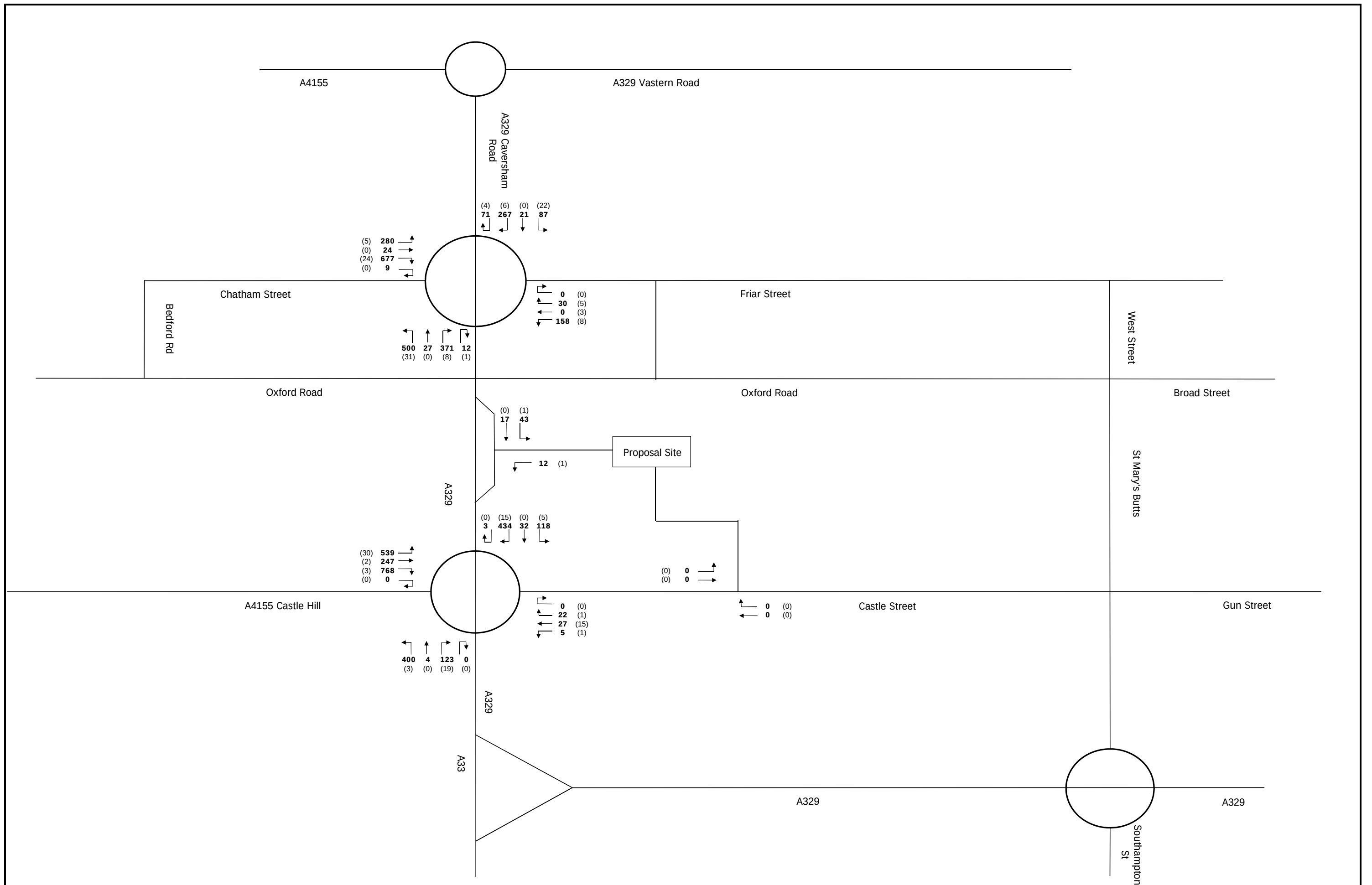
	Version	Notes
Trip End Type	Origin / Destination	Origin / Destination or Production / Attraction
Transport Mode	Car Driver	Walk / Cycle / Car Driver / Car Passenger / Bus or Coach / Rail or Underground – More than one option may be selected
Area Type	Urban	Urban / Rural / All
Road Type	All	Motorway / Trunk / Principal / Minor / All

4.0 - Growth Factors

The assessment of traffic growth using the TEMPRO software with the aforementioned parameters results in the following local growth factors for the geographical area set out at **Section 1.0**

Surveyed Period	Assessment Year	Time Period	Local Growth Factor
2018	2023	Weekday AM Peak Period (0700 – 0959)	1.0819
		Weekday PM Peak Period (1600 – 1859)	1.0756

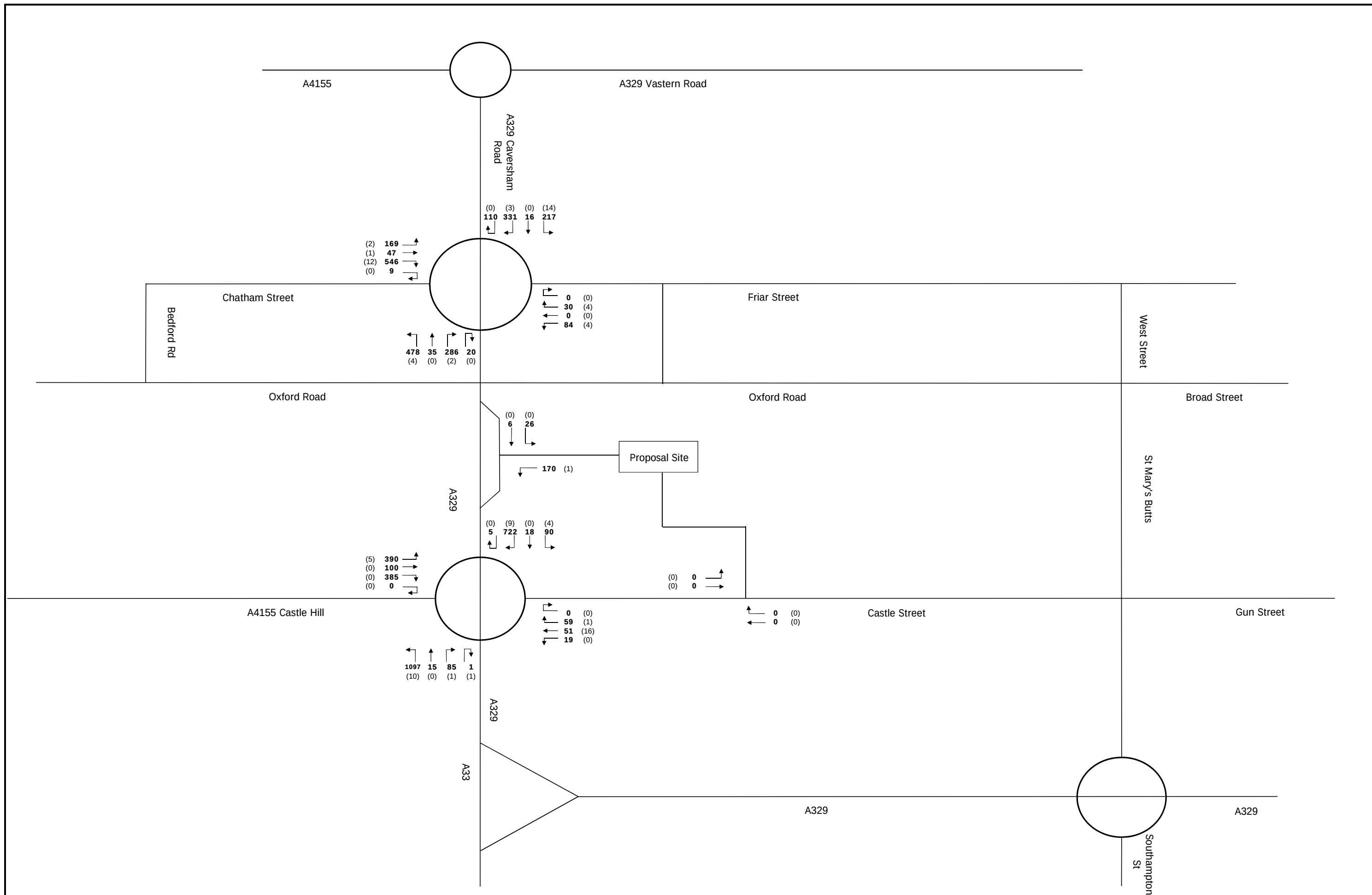
APPENDIX 4 – 2023 BASE FLOWS



PROPOSED DEVELOPMENT: Broad Street Mall, Reading

AM Peak (07:30-08:30)

2023 Base Flows



APPENDIX 5 – TRICS DATA

Calculation Reference: AUDIT-142301-181112-1106

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

01	GREATER LONDON	
	HM HAMMERSMITH AND FULHAM	1 days
	HO HOUNSLOW	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	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: 20 to 154 (units:)
Range Selected by User: 6 to 493 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 03/07/18

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:

Wednesday	2 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	5 days
Directional ATC Count	0 days

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

Selected Locations:

Town 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:

Built-Up Zone	4
High Street	1

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

Secondary Filtering selection:

Use Class:

C3	5 days
----	--------

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

25,001 to 50,000	4 days
100,001 or More	1 days

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

Population within 5 miles:

75,001 to 100,000	1 days
500,001 or More	4 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	4 days
1.1 to 1.5	1 days

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

Travel Plan:

Yes	1 days
No	4 days

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

PTAL Rating:

No PTAL Present	3 days
3 Moderate	1 days
5 Very Good	1 days

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

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

MULTI-MODAL 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	5	68	0.020	5	68	0.044	5	68	0.064
08:00 - 09:00	5	68	0.023	5	68	0.041	5	68	0.064
09:00 - 10:00	5	68	0.018	5	68	0.026	5	68	0.044
10:00 - 11:00	5	68	0.023	5	68	0.029	5	68	0.052
11:00 - 12:00	5	68	0.032	5	68	0.023	5	68	0.055
12:00 - 13:00	5	68	0.026	5	68	0.020	5	68	0.046
13:00 - 14:00	5	68	0.032	5	68	0.041	5	68	0.073
14:00 - 15:00	5	68	0.018	5	68	0.029	5	68	0.047
15:00 - 16:00	5	68	0.020	5	68	0.023	5	68	0.043
16:00 - 17:00	5	68	0.064	5	68	0.029	5	68	0.093
17:00 - 18:00	5	68	0.044	5	68	0.035	5	68	0.079
18:00 - 19:00	5	68	0.041	5	68	0.023	5	68	0.064
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.361			0.363			0.724

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:	20 - 154 (units:)
Survey date date range:	01/01/10 - 03/07/18
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

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

MULTI-MODAL TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	68	0.003	5	68	0.003	5	68	0.006
08:00 - 09:00	5	68	0.000	5	68	0.003	5	68	0.003
09:00 - 10:00	5	68	0.003	5	68	0.003	5	68	0.006
10:00 - 11:00	5	68	0.000	5	68	0.000	5	68	0.000
11:00 - 12:00	5	68	0.003	5	68	0.003	5	68	0.006
12:00 - 13:00	5	68	0.003	5	68	0.003	5	68	0.006
13:00 - 14:00	5	68	0.003	5	68	0.003	5	68	0.006
14:00 - 15:00	5	68	0.000	5	68	0.000	5	68	0.000
15:00 - 16:00	5	68	0.000	5	68	0.000	5	68	0.000
16:00 - 17:00	5	68	0.003	5	68	0.000	5	68	0.003
17:00 - 18:00	5	68	0.003	5	68	0.000	5	68	0.003
18:00 - 19:00	5	68	0.000	5	68	0.003	5	68	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.021			0.021			0.042

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

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

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

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

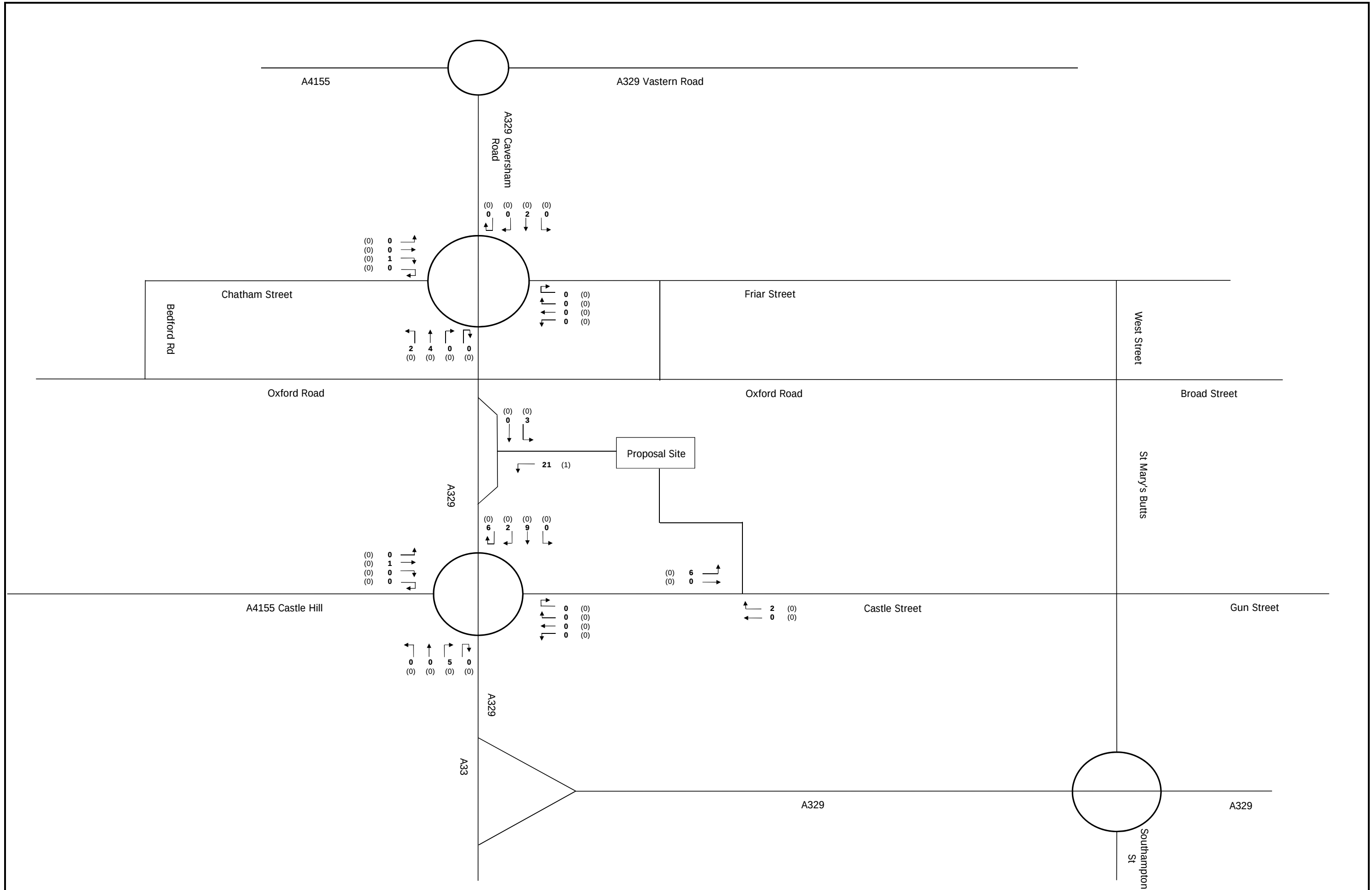
BOLD print indicates peak (busiest) period

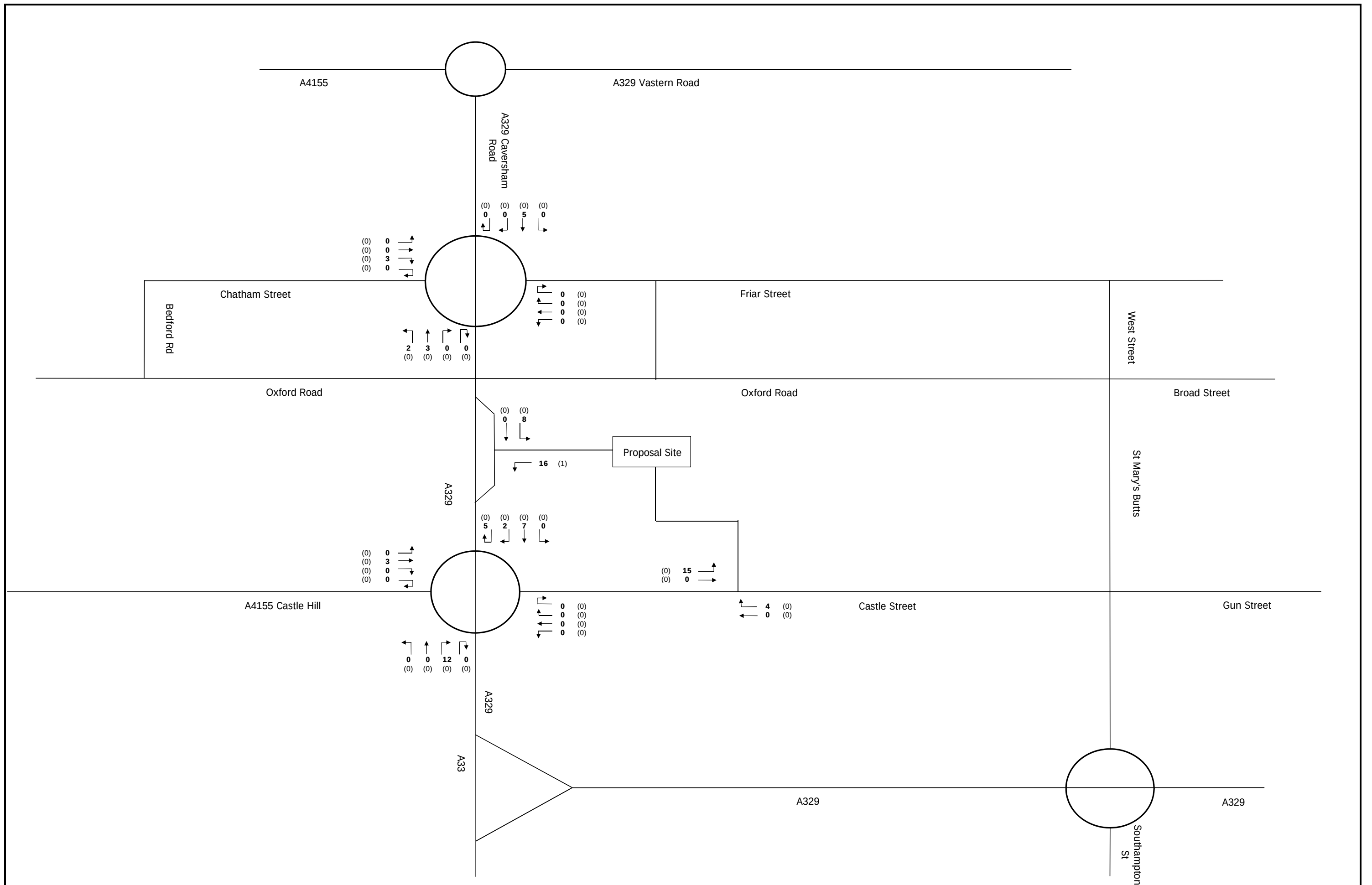
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	68	0.003	5	68	0.003	5	68	0.006
08:00 - 09:00	5	68	0.000	5	68	0.000	5	68	0.000
09:00 - 10:00	5	68	0.000	5	68	0.000	5	68	0.000
10:00 - 11:00	5	68	0.000	5	68	0.000	5	68	0.000
11:00 - 12:00	5	68	0.000	5	68	0.000	5	68	0.000
12:00 - 13:00	5	68	0.000	5	68	0.000	5	68	0.000
13:00 - 14:00	5	68	0.000	5	68	0.000	5	68	0.000
14:00 - 15:00	5	68	0.003	5	68	0.000	5	68	0.003
15:00 - 16:00	5	68	0.000	5	68	0.003	5	68	0.003
16:00 - 17:00	5	68	0.000	5	68	0.000	5	68	0.000
17:00 - 18:00	5	68	0.003	5	68	0.003	5	68	0.006
18:00 - 19:00	5	68	0.000	5	68	0.000	5	68	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.009			0.009			0.018

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.

APPENDIX 6 – DEVELOPMENT FLOWS





PROPOSED DEVELOPMENT: Broad Street Mall, Reading

PM Peak (16:30-17:30)

Theoretical Development Flows

APPENDIX 7 – 2023 BASE FLOWS + PROPOSED DEVELOPMENT

