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Proposed Redevelopment at
ICL Sports Ground
Teddington

TRANSPORT ASSESSMENT

On behalf of
Quantum Group

ITR/HL/4839/TA.6

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APPENDICES

1.0 INTRODUCTION

1.1 Bellamy Roberts LLP, a firm of highway transportation and infrastructure consultants, has been instructed by Quantum Group to provide professional advice in connection with proposals to redevelop the former Imperial College London's sports grounds at Cromwell Road, Teddington.

1.2 The development proposal is to comprise 108 assisted living extra care units, a GP surgery, a new pavilion, community space and sports facilities with associated car parking and accesses.

1.3 This report should be read in conjunction with the documents and plans submitted as part of the application.

1.4 Pre-application discussions have taken place with the Local Authority to agree the scope of this Transport Assessment and agree the methodology of the analyses undertaken. A copy of the Scoping Note is included at **Appendix 1**.

2.0 STRUCTURE OF DOCUMENT

2.1 This Transport Assessment has been prepared in accordance with National Planning Policy Guidance. This report includes the following headings:

Planning Policy: This discussed the relevant national and local transport policies to be considered alongside the proposal.

Existing Conditions: This outlines the location of the site in relation to the surrounding highway network and built environment. It describes the adjoining highway network and existing highway conditions.

Sustainable Transport Connections: This covers the neighbouring sustainable transport links and current Government guidance regarding walking and cycling distances.

Baseline Traffic Data: This outlines the primary traffic data that has been collected for the purposes of establishing the impact of the proposals on the adjacent network.

Accident Data: This section assesses personal injury accident data from the past six years, to establish any existing accident trends within the neighbouring highway network.

Development Proposals: This describes the development proposals included as part of the planning application.

Site Access and Offsite Highway Improvements: This section covers the site access and offsite highway improvements proposed alongside the application.

Parking: This looks at existing car parking policy for the area and provides an assessment of the parking provision and its suitability.

Measures to Influence Travel Behaviour: This section considers the initiatives proposed, including Travel Plans and on and offsite measures to reduce reliance on the private car.

Proposed Traffic Generation. This section discusses the methodology and research used to calculate the traffic generation for the site.

Traffic Distribution: This covers the methodology used to calculate the traffic distribution of the site using National Census data.

Committed Development: This section outlines the committed development assumptions used when calculating the impact of the proposals on the surrounding highway network.

Non-Motorised Users: This section considers the requirements of non-motorised users throughout the site and on the streets immediately adjacent. This includes those travelling by foot, cycle and those with disabilities.

Summary and Conclusions.

3.0 PLANNING POLICY

3.1 Planning Policy is outlined within the National Planning Policy Framework (NPPF), adopted in March 2012.

3.2 Paragraph 29 of the NPPF states:

> "*Transport Policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. Similar use of technology can reduce the need to travel. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural access".*

3.3 Paragraph 32 of the NPPF states:

"*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. Developments should only be prevented or refused on transport grounds where the residual cumulative impacts are severe".*

3.4 The NPPF also covers parking standards within new developments and, in this regard, Paragraph 39 states:

"*If setting local parking standards for residential and non-residential development, Local Planning Authorities should take into account:*

- *The accessibility of the development;*
- *The type, mix and use of development;*
- *The availability of and opportunities for public transport;*

- *Local car ownership levels; and*
- *An overall need to reduce the use of high emission vehicles!*

3.5 The National Planning Practice Guidance (NPPG) was published in March 2014 which provides advice on the NPPF. There are no new issues or interpretation of that document that give rise to any changes to the approach undertaken within this assessment.

The London Plan

3.6 The London Plan Policy 6.13 states:

- *The Mayor wishes to see an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use.*
- *The Mayor supports park and ride schemes in outer London where they will lead to overall reductions in congestion, journey times and vehicle kilometres.*
- *The maximum standards set out in Table 6.2 in the parking addendum to this chapter (of the plan) should be the basis for considering planning applications (also see Policy 2.8) informed by policy and guidance below on their application for housing in parts of outer London with low public transport accessibility (generally PTALS 0-1).*
- *In addition, developments in all parts of London must:*
  - *I. Ensure that 1 in 5 spaces (both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles.*
  - *II. Provide parking for disabled people in line with Table 6.2.*
  - *III. Meet the minimum cycle parking standards set out in Table 6.3.*
  - *IV. Provide the needs of businesses for delivery and servicing*

Local Policies

3.7 Richmond Borough Council are currently in the process of preparing a new Local Plan for the Borough, which will replace the existing policies within the Core Strategy and Development Management Plan. The new Local Plan is still progressing through the consultation phases and until such time as this has been adopted the existing policies should still be applied

Land Development Framework Core Strategy Adopted April 2009.

3.8 Policy CP5 Sustainable Travel States:

'The need for travel will be reduced by the provision of employment, shops and services to the most appropriate level locally, within the network of town centres identified in CP8. To implement this policy the Council will:

- Protect and enhance local facilities and employment to reduce the need to travel; and
- Require developments which would generate significant amounts of travel to be located on sites well served by public transport.

Land for Transport

- Safeguard land for existing and proposed transport functions; and
- Reflect the above priorities in the allocation of round spaces as part of the Parallel Initiatives.

Cycling and Walking

- Give priority to pedestrians, including those with disabilities, particularly in Richmond Town Centre and the district and local shopping centres;
- Provide and promote a well-designed bicycle and walking network across the Borough (the Strategies, Walks network, Richmond Borough Cycle Network and London Cycle Network Plus), and improve conditions for cyclists and pedestrians elsewhere;
- Prioritise the needs of pedestrians and cyclists in the design of new developments, including links to existing networks and requiring the provision of adequate cycle parking; and
- Investigate the possibility of a footbridge across the Thames between Ham and Twickenham for pedestrians and cyclists;

Public Transport

- Improve provision for buses particularly in Richmond and Twickenham town centres, and seek to improve bus services within River Crane Corridor through the implementation of development proposals;
- Achieve integration and convenient interchange facilities at all borough's stations;

- Seek improvements to orbital public transport including fast access to Heathrow; and
- Improve walking, cycling and public transport in areas less well served by public transport, including some of the areas of relative deprivation.

Congestion and Pollution

- Undertake traffic management measures to reduce the impact of traffic particularly in Richmond Town Centre, the districts and local centres, residential areas and streets unsuitable for through traffic.

Car Parking and Travel

- Require new car free housing in Richmond and Twickenham town centres and in other areas where there is good public transport and elsewhere have regard to maximum parking standards;
- Require car share facilities and car clubs in appropriate new developments and encourage the use of low emission motor vehicles in order to reduce congestion and pollution;
- Discourage commuter parking particularly by giving priority to resident's needs; and
- Limit any further expansion of parking in town and local centres and manage parking controls to help maintain the vitality and viability of the centres, including the evening economy.

Sustainable Travel

- Encourage major employers and schools to develop Green Travel Plans and require these where appropriate with planning applications;
- Require all major developments to submit a Transport Assessment based on TfL's Best Practice Guidance;
- Encourage efficient, safe and sustainable freight transport; and
- Encourage newer transport through the retention and support for new transport infrastructure.

3.9 The Council will support measures to minimise the impacts of Heathrow, particularly on traffic and noise on the Borough and will oppose changes that increase local impacts. Specifically it will seek the support of BAA, the Government and relevant statutory authorities for the following measures:

a) Maintenance of the 480,000 limit on total air transport movements;
b) Maintenance of the current system of segregated routes;
c) Maintenance of the current noise preferential routes;
d) The discontinuation of night flights; and
e) Restrictions of the use of private cars and improvements to public transport including a southern rail link.

3.10 It is with consideration of the above policy guidance that the proposal at ICL Sports Ground, Teddington has been assessed.

4.0 EXISTING CONDITIONS

4.1 The application site comprises the existing former ICL's sports ground located south of Teddington High Street. The site is bordered by Cromwell Road, Udney Park Road and Kingston Lane on its southern, western and eastern boundaries respectively.

4.2 Accesses to the existing pavilion and car park accommodating circa 25 spaces is currently achieved directly from Udney Park Road, with a further access available from Cromwell Road. The location of the site is indicated at Figure 1. A site location plan has been attached at **Appendix 2**.

4.3 The site is a private ground with access granted occasionally and on a temporary basis to a small number of selective groups. The site includes a clubhouse, 3 tennis courts and 5 football pitches.

4.4 The car park served off Udney Road served the site and was used daily by sports teams visiting the site.

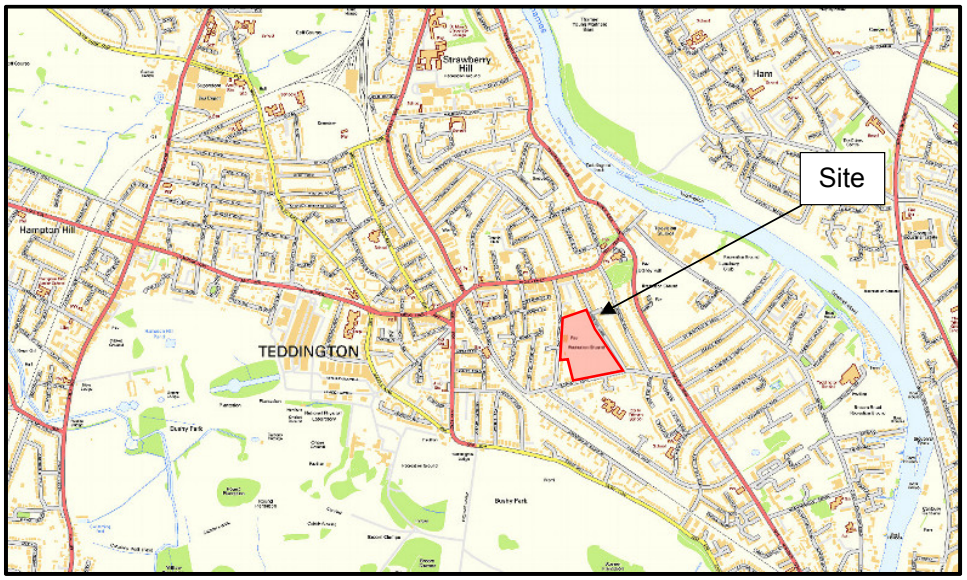

Figure 1: Location of the Site

Udney Park Road

4.5 Udney Park Road runs along the western edge of the application site, connecting Teddington High Street to the north, with Cromwell Road to the south.

4.6 The carriageway is approximately 5.5m in width with a footway running along the entire length of its western edge. Along the eastern edge there is a footway running along the first 120m from the High Street heading south, with approximately 225m of highway verge adjacent to the site, and 110m of footway at its southern end. There is a worn footpath along the section of verge adjacent to the site with a number of mature highway trees.

4.7 On street parking takes place along the length of Udney Park Road which is located just outside of a CPZ. On-street parking occurs on both sides of the carriageway for the initial 130m from the High Street. The remainder of Udney Park Road is of insufficient width to allow parking on both sides.

Kingston Lane

4.8 Kingston Lane borders the eastern boundary of the site and runs on a broadly north/south alignment. It is subject to a 30mph speed restriction and has no parking restrictions along much of its length.

Cromwell Road

4.9 Cromwell Road runs along the southern boundary of the site and lies on an east/west alignment connecting Station Road to the west with Kingston Lane to the east. Pedestrian footways are provided on both sides of the carriageway and are approximately 2.5m in width along the northern side of the carriageway, and 2.0m on the southern side.

4.10 The carriageway is approximately 6.0m in width with a single yellow line parking restriction running along the southern edge of the carriageway.

4.11 There are traffic calming features (speed cushion) present at points along Cromwell Road which is subject to a 30mph speed restriction. In the vicinity of the existing maintenance access there are keep clear markings outside Collis Primary School.

4.12 The area surrounding the site is predominantly residential with the local centre located 180m to the north. See previous Figure 1.

5.0 SUSTAINABLE TRANSPORT CONNECTIONS

5.1 This section examines the sustainable transport connections to the site and assesses the potential of such links to reduce the level of car-borne traffic.

Pedestrians

5.2 The application site is well connected to the neighbouring footway network, with links provided throughout the site to existing footways running along the eastern, western and southern boundaries. The site is ideally located to make best use of local facilities situated in Teddington Town Centre.

5.3 Recommended walking distances are set out in the 'Guidelines of providing for journeys on foot' by the Institution of Highways and Transportation. Within Table 3.2, the suggested walking distances have been set out. Whilst 2km still features as a preferred maximum walking distance for commuting, for other locations a distance of 1.2km is stated. A pedestrian isochrones plan has been attached at **Appendix 3**.

Cycle

5.4 Cycling has the potential to substitute short car trips, particularly those under 5km, and, as such, forms part of a larger journey by public transport. In the absence of specific guidance on this point in the recently publicised National Planning Policy Framework (NPPF) March 2012, which replaces most of the previously adopted Planning Policy Guidance Notes and Statements, this is still considered relevant for staff and visitors to the site.

5.5 The closest cycle routes to the site can be found running along the eastern side of the River Thames which can be accessed via the existing pedestrian-footbridge located at the eastern end of Ferry Road just 600m from the site as a straight line distance. The quickest route from the site is north along Kingston Lane to the High Street and eastwards until the High Street becomes Ferry Road and continues on till it ends adjacent to the River Thames.

5.6 The cycleway runs south along the Thames until Kingston upon Thames where it heads west through Bushy Park. At the approximate location where the footbridge crosses the River Thames, the cycleway heads east towards Richmond Park. This is part of Route 4 which is a long distance route between London and the west coast of Wales. A cycle isochrones provided at **Appendix 4**.

Buses

5.7 The closest bus stops to the site can be found on Teddington High Street north of the site. Stops are located on the north and south sides of the carriageway well within the recommended walking distance of 400m.

5.8 The eastbound stop is situated on the north side of the carriageway between Udney Park Road and Kingston Lane. The stop comprises a bus shelter with seating in addition to a bus flag pole with timetable information.

5.9 The westbound stop is located on the southside of the High Street to the immediate west of the junctions of Udney Park Road and the High Street. This stop also comprises a bus shelter with seating in addition to a bus flag pole with timetable information.

5.10 Teddington High Street is served by Routes 281, 285 and R68. A summary of these services is outlined in Table 1 below:

Table 1: Summary of Bus Timetables

Route	From	To	Freq.	Mon-Fri		Sat		Sun	
				First	Last	First	Last	First	Last
281	Tolworth Tower	Hounslow Bus Station	7-10 mins	24 Hours					
285	Cromwell Road Bus Station	Heathrow Central Bus Station	9-12 mins	24 Hours					
R68	Kew Retail Park	Hampton Court Railway Station	15 mins	0527	0127	0526	0128	0616	0126

Rail

5.11 The application site is situated approximately 550m from Teddington Railway Station, this provides services to Shepperton and London Waterloo via Kingston, (or Richmond) with stations between.

5.12 Teddington station has level access to both platforms, cycle parking, waiting facilities and a taxi rank. There is a direct pedestrian route from the site to the station along Cromwell Road and Station Road to the west.

Underground

5.13 The London Underground Direct Line runs between Richmond and Upminster with Stations between. This provides a direct link throughout London with a direct bus service connecting Richmond Underground Station to the development site.

PTAL

5.14 A public transport accessibility level has been calculated for the application site. This indicates that the site has a PTAL level of 1b and 2. See Figure 2 below.

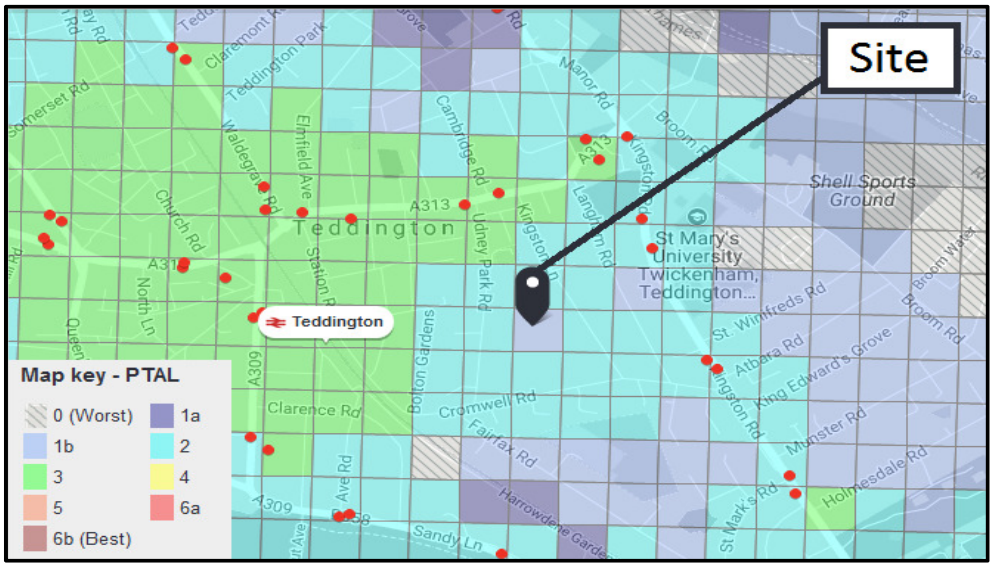

Figure 2: PTAL Levels

6.0 BASELINE TRAFFIC DATA

6.1 In order to establish the impact of the proposals on the neighbouring highway network a range of traffic video surveys have been undertaken.

6.2 The following Figure 3 identifies the video survey locations that were chosen. These are positioned around the site, allowing base network conditions to be established.

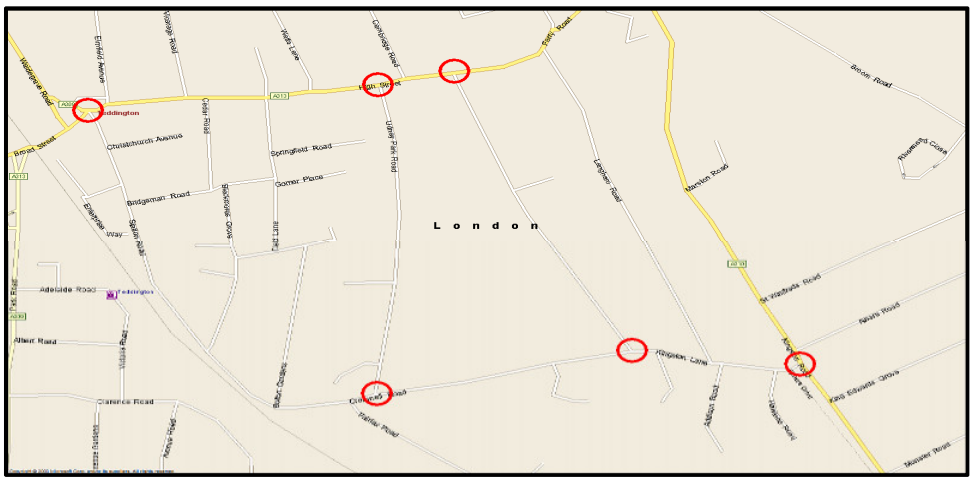

Figure 3: Video Survey Locations

6.3 The video surveys were conducted on Tuesday 14th July 2016 for a 12 hour period (0700-1900), allowing the network peak hours to be identified and traffic flows through the neighbouring residential area during off peak hours, when the network is at its quietest.

6.4 The junctions identified comprise the following locations:

- Junction of Udney Park Road/ High Street
- Junction of Kingston Lane/ High Street
- Junction of Udney Park Road/ Cromwell Road
- Junction of Kingston Lane/ Cromwell Road
- Junction of Kingston Lane/ Kingston Road
- Junction of Cromwell Road and A313

6.5 Drawings 4839/401, 4839/402, 4839/403 have been created to show graphically the vehicle movements in the AM and PM network peaks and across the 12 hour period. They are attached at **Appendix 5** and the full survey results have been attached at **Appendix 6**.

Automatic Number Plate Recognition (ANPR) Surveys

6.6 The area immediately surrounding the site is predominantly residential and as such, during the off-peak periods, traffic flows are low. The majority of traffic passing through the wider area utilises Teddington High Street and Kingston Road. On-street parking takes place along both Udney Road and to a lesser degree Kingston lane.

6.7 The ANPR survey that was undertaken established whether traffic using these roads, during peak periods, comprise local residents or extraneous traffic travelling between the High Street, or vice versa. Figure 4 below identifies the roads that were assessed during the ANPR survey.

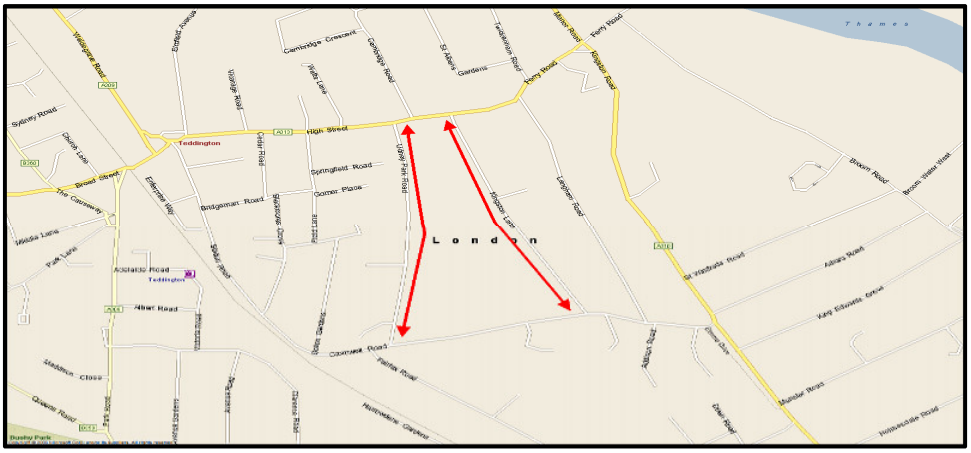

Figure 4: Automatic Number Plate Recognition Survey

6.8 The ANPR survey was undertaken on Thursday 14th July 2016 and monitored the time taken for vehicles travelling on Udney Park Road and Kingston Lane, between the hours of 0700 and 1900.

6.9 The cameras were placed at the 4 junctions shown on the following Figure 5, and have been referenced as S1, S2, S3 and S4.

Figure 5: ANPR Survey Camera Locations.

6.10 Drawings 4839/404 to 4839/407 show the results of the ANPR survey and have been attached at **Appendix 7.** The full results of the survey have been attached at **Appendix 8**.

6.11 In summary, some 751 vehicles entered and exited the survey area between 0700 and 1900. From analysing the results of the ANPR survey it was found that 59% of the vehicles (446) are within the survey area for less than 2 minutes, and 10% of vehicles spent over 3 hours within the survey area. The remaining 31% of vehicles are likely using the road for parking due to the close proximity of the facilities along Teddington High Street.

6.12 Four hundred and eighty four vehicles entered Kingston Lane at either S2 or S3 and 267 vehicles entered Udney Park Road at either S1 or S4.

6.13 Three hundred and fifty vehicles travelled the length of Kingston Lane S2 to S3 or vice versa. Of the 350 vehicles using Kingston lane, 76% (267) spent under 2 minutes in the surveyed area.

6.14 Using data from the video surveys it can be determined that 67% of the southbound traffic turns left at the junction with Cromwell Road and 82% of northbound traffic turns left onto Teddington High Street.

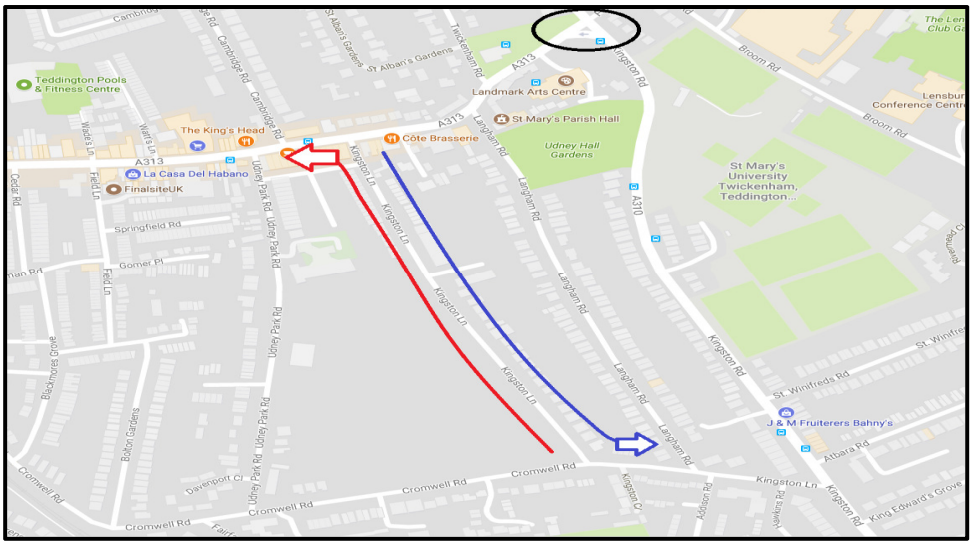

Figure 6: 'Rat Runs' on Kingston lane.

6.15 Figure 6 above, shows the Kingston Road/Teddington High Street traffic light junction circled near the top right. From the surveys it is evident that Kingston Lane is used as a 'short cut' to avoid these traffic signals at the A313/Kingston Road

Junction. From the ANPR survey it is evident that some 450 vehicles pass through the area to avoid congestion at these junctions.

6.16 Approximately 42% of vehicles travelling Southbound on Kingston Lane turn left in less than 2 minutes, the movement shown in blue in figure 7. Approximately 68% of vehicles travelling Northbound on Kingston Lane turn left onto Teddington High Street in less than 2 minutes, the movement shown in red in figure 7.

6.17 The results of the survey also show a high number of vehicles exiting at the same junction they entered Kingston Lane or Udney Park Road, the movement shown on the following Figure 7.

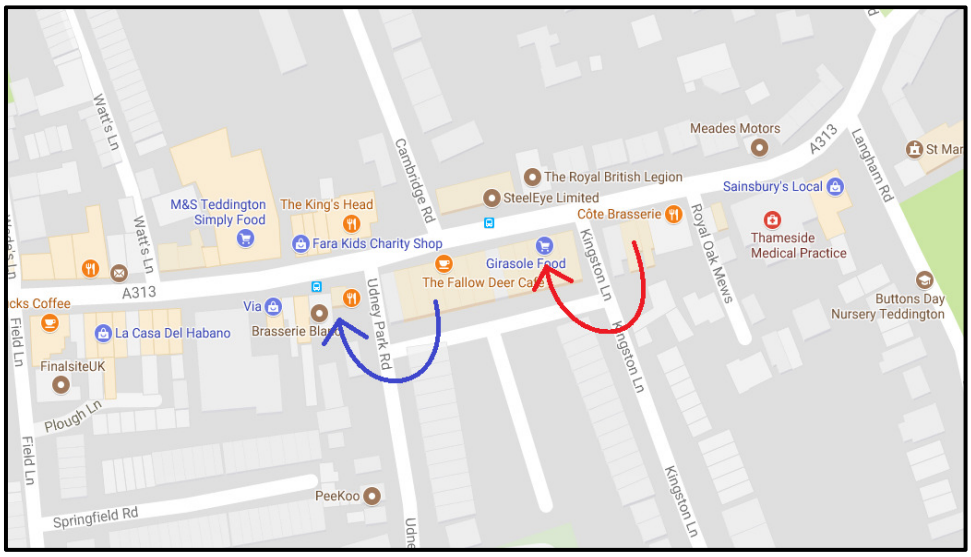

Figure 7: U-turns on Udney Park Road and Kingston Lane

6.18 Eighty one (49%) of vehicles that entered Udney Park Road from Teddington High Street exited back on to the high street at the same junction, and 31% (25) of those movements took less than 2 minutes, likely dropping off a passenger due to the close proximity of the High Street. The remaining 69% (56) of vehicles are likely to be either residents or shoppers using the facilities along High Street.

6.19 Ninety three (42%) vehicles that entered Kingston Lane from Teddington High Street exited back on to the High Street at the same junction, 24% (22) of those movements took less than 2 minutes.

Car Parking Survey

6.20 A parking survey was conducted on the road surrounding the site, namely Udney Park Road, Kingston Lane and Cromwell Road.

6.21 The on-street parking survey, was undertaken to determine whether the existing parking stress and the loss of on-street spaces due to the construction of the proposed access points, would have a detrimental impact on the current on-street parking regime. The survey was undertaken following the Lambeth methodology.

6.22 Tables 2, 3 and 4 below summarise the findings of the survey.

Table 2: Parking Beat Survey (Sunday) 8th May 2016

Road Name	Number of Parked Cars	Total Number of Parking Spaces	%
Udney Park Road	85	90	94
Kingston Lane	74	130	57
Cromwell Road	24	49	49

Table 3: Parking Beat Survey (Day 1) 5th May 2016

Road Name	Number of Parked Cars	Total Number of Parking Spaces	%
Udney Park Road	72	90	80
Kingston Lane	66	130	51
Cromwell Road	22	49	45

Table 4: Parking Beat Survey (Day 2) 10th May 2016

Road Name	Number of Parked Cars	Total Number of Parking Spaces	%
Udney Park Road	73	90	81
Kingston Lane	65	130	50
Cromwell Road	18	49	37

6.23 The results of the parking survey show low levels of parking stress on Kingston Lane and Cromwell Road with approximately 53% and 44% of car parking spaces occupied respectively.

6.24 There is a higher level of stress on Udney Park Road with approximately 85% of car parking spaces occupied across the 3 days. The proposed developed will not exacerbate this as the site features on site parking.

6.25 The car club bay and disabled parking bay on Kingston Lane were occupied on all 3 days of the survey.

7.0 ACCIDENT DATA

7.1 Collision data has been obtained from Transport for London (TfL) to determine whether there are any existing safety concerns on the Local Highway Network. Personal Injury Accident data was initially obtained for the 5 year period 2011-2015. The location of personal injury collisions, and the area search is shown on the following Figure 8.

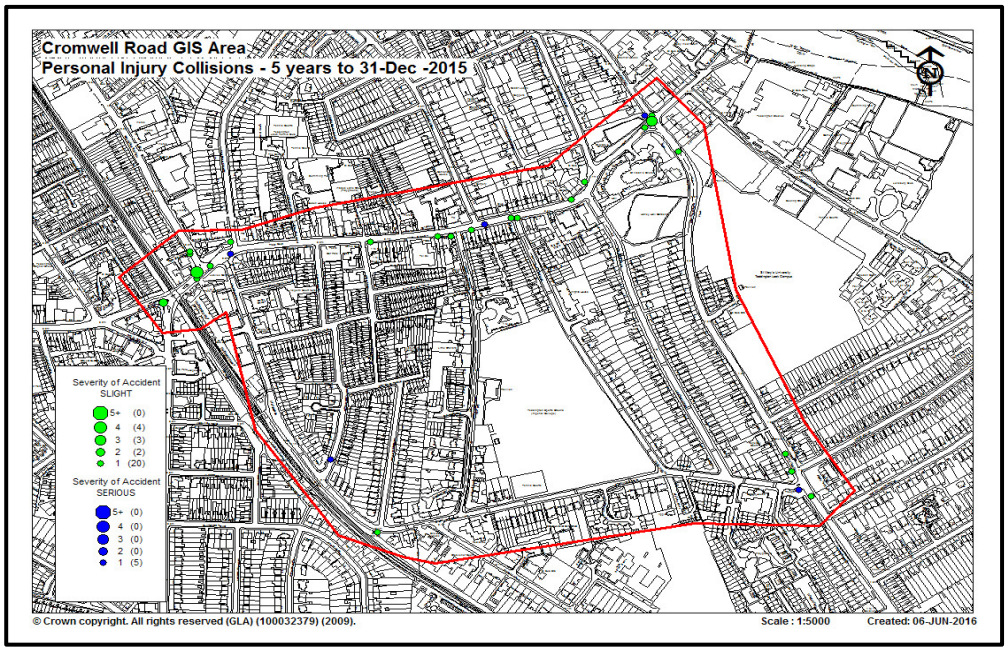

Figure 8: 2011-2015 Collision Data

7.2 Provisional data for January – October 2016 (most up to date data) has been obtained and is shown on the following Figure 9, and the full accident report has been attached at **Appendix 9**.

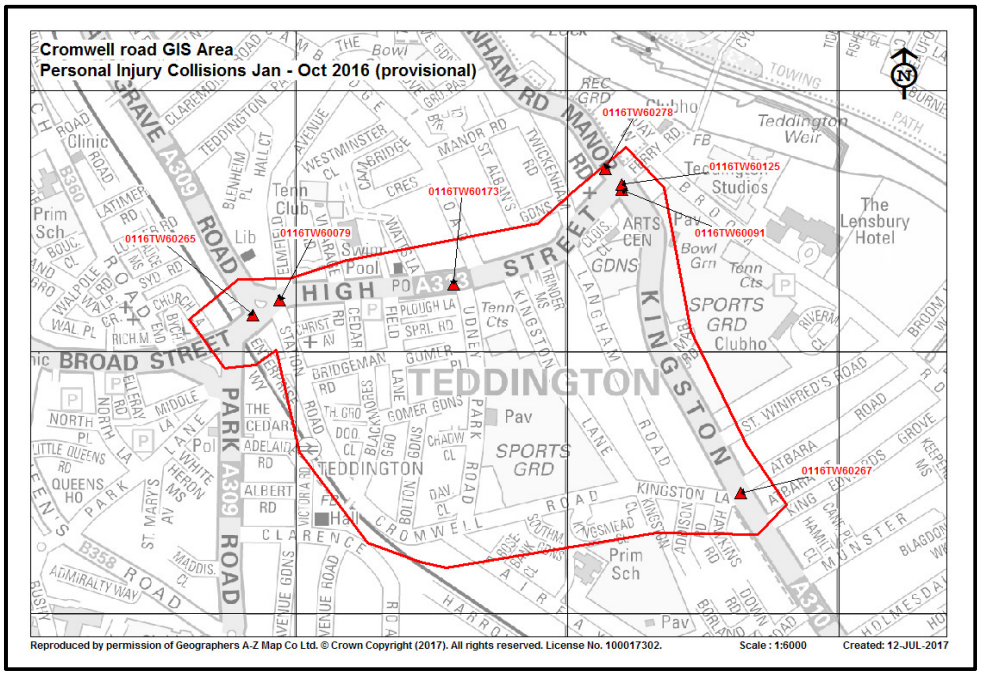

Figure 9: 2016 Jan-Oct 2016 Provisional Collision Data

7.3 Thirty-four accidents occurred within the highlighted area in Figure 8, and seven within the same highlighted are in in Figure 9. The following Table 5 shows the years in which the accidents took place.

Table 5: Accidents by Year

Year of Accident	Number of Accidents
2011	11
2012	4
2013	5
2014	10
2015	4
Jan-Oct 2016 (provisional)	7

7.4 One accident occurred between January 2011 and October 2016, 34 occurred on or in close proximity to Teddington High Street. *Failure to look properly* is a possible factor in more than half of cases and is mentioned in 23 accident counts. *Failed to judge other person's path or speed* is a possible factor in 14 accident counts. 15 accident counts involved a cyclist.

7.5 It is worth noting that Teddington High Street and Kingston Road are busy main roads, therefore minor accidents are inevitable.

7.6 The minor accident on Cromwell Road, (Figure 8), involved a collision between two cars. The car in the process of turning right into Bolton Gardens was at fault for failure to look properly.

7.7 The serious collision on Blackmore's Grove occurred in dark conditions with 'a loss of control', the only factor given for the car hitting a parked car.

7.8 There is considered to be no significant accident or safety problem within the existing highway network, and the proposed change of use will not cause any demonstrable harm to highway users in the vicinity of the site.

8.0 DEVELOPMENT PROPOSALS

8.1 The proposed redevelopment will see the Imperial College London Private Ground regenerated for a mixed use development that will deliver high quality sports and community facilities alongside new public open space, affordable care led accommodation for older people and a new GP surgery.

8.2 The new GP Surgery will contain 12 consulting rooms with a floor area of 1237m^2. The service provider will be Park Road Surgery, one of two existing surgeries in the Teddington Ward who will occupy the new building. The site will be accessed from Kingston Lane.

8.3 108 extra care apartments are proposed at the site, one of which is a visitors apartment. The apartments will be separated into 3 plots.

8.4 Plot A has 92 apartments and is situated in the north east of the site. It is accessed from Kingston Lane and has an underground car park and a drop off area and additional parking at grade.

8.5 Plot B and Plot C are situated on the west of the site and are accessed from Udney Park Road. They comprise of 7 and 9 apartments respectively.

8.6 There are 30, one bed apartments, 71, two bed apartments and 7, three bed apartments in total are proposed.

8.7 The proposed community sports facilities will comprise of the following:

- A full size Third Generation artificial grass pitch (3G AGP);
- Natural grass playing pitch provision;
- Tennis Courts/MUGA;
- Community pavilion containing changing rooms, kitchen, bar and server, flexible-use community rooms and crèche (900sqm); and
- The open parkland will include a community orchard, outdoor gym and playground

Proposed Site Accesses

8.8 As discussed previously, the existing site is served via three existing vehicular accesses, two along Udney Park Road and one from Cromwell Road.

8.9 The existing accesses on Udney Park Road, which currently serves the clubhouse and the ICL Sports Ground car park, will be retained and enlarged, with the double gate being removed. The access which is to serve Plot C (7 extra care unit) is to move slightly from the existing position (See Appendix 10). The access would serve 8 car parking spaces, the existing access serves the sports ground car park which accommodates in the region of 25 parking spaces.

8.10 Plot A (92 extra care units and GP Surgery), will be served by two new vehicular accesses. The community sports centre will be accessed from Cromwell Road off a single access. The proposed development will be served by 5 separate vehicle accesses.

8.11 In line with Manual for Streets (MfS) and the posted speed of 30mph, visibility splays of 2.4m x 40m have been shown at each of the proposed accesses. See **Appendix 10**.

8.12 The accesses have been labelled as follows:

- Plot A: Accesses 1 and 2
- Plot B: Access 3;
- Plot C: Access 4; and
- Community Sports Ground: Access 5.

8.13 One tree at Access 5 and another at Access 2 will be removed to provide access as shown on drawings 4839/203 and 204 respectively. No trees require removal at the remaining proposed accesses. It is suggested that a discussion to remove or retain trees to provide clearer visibility should be held on site with the London Borough of Richmond upon Thames Highway Officer.

8.14 The installation of a new pedestrian crossing on Cromwell Road near to Collis Primary School will provide a benefit to local residents, school children and visitors to the community sports grounds.

8.15 The public park provides local residents with an open green space and footpath that links Udney Park Road, Kingston Lane and Cromwell Road.

9.0 PARKING

9.1 Advice has been received from the Strategic Applications Manager at Richmond Council. This has been provided within a Pre-Application Report dated January 2017, and more recently by an email received 25th July 2017. Both correspondence have been attached at **Appendices 11** and **12**, respectively.

9.2 The more recent advice set out in the email provides advice for determinining the level of car parking for the GP surgery and extra care units and states that the standards within the Local Plan Review should be followed. The relevant extract from the Local Plan Review has been attached at **Appendix 13**.

9.3 The Officer stated that the 2011 Development Management Plan and London Plan Review only cover general residential, sheltered housing and retirement housing. However in terms of extra care housing, and that '*there are no precise standards*'.

9.4 Informally however, the Officer recommended '*at least 1 space per unit (if they are all self-contained), however, this may be subject to change when details are provided/or with robust justification on the product'*.

9.5 Whilst the accommodation allows independence in later life, and is defined as 'extra care', care is delivered on site and in residents homes and residents have access to extensive communual facilities. In this context, the following information justifies a lower number of spaces being provided.

Extra Care Apartments – Car Parking

9.6 The proposed Extra Care Apartments have been designed with elderly living in mind. The apartments incorporate the 'Lifetime Homes' design criteria, and wheelchair standard principles. Such units are flexible and can be adapted to the residents' future changing needs.

9.7 Residents of the property must be a minimum of 55 years old.

9.8 The Extra Care units will offer a number of communal facilities (listed below), and the on-site management team will monitor rooms and gardens. All communal facilities will be accessible to all residents, and will include:

- Guest suites;
- Residents lounge area;
- Dining room;
- Private dining room;
- Hairdressers;
- Well-being suite;
- Treatment rooms;
- Studio/activity room;
- Library;
- Mobility scooters;
- Communal Gardens;
- Computer/internet facilities; and
- Small convenience facility, offering daily essentials.

9.9 Unique to this site is the provision of a GP Surgery and pharmacy, for use by both the general public, and residents of the scheme.

9.10 Further details of the facilities provided are set out in accompanying Design and Access Statement.

9.11 Lower car ownership is a characteristic of Extra Care accommodation, and this arises due to a number of reasons which lie behind the decision to move to specialist accommodation. These reasons include location, age, illness, bereavement and a desire to downsize. These are all factors which influence desire or willingness to give up on the ownership of private motor vehicles.

9.12 There is a steep change in the post occupation level of car ownership once people have settled in, whereby those residents who have retained vehicles, begin to give them up, usually over a period of 12-18 months. Current data shows that a high percentage of retirement living/extra care customers have given up their cars before moving into a retirement community.

9.13 The proposed development will provide residents with the use of a pool car/car share vehicle, enabling residents to feel more comfortable in relinquishing their car prior to moving to the community.

9.14 Local Census data (2011), shows that car ownership in the area is 28% for over 65s in a one person household. See Table 6, below.

Table 6: Summary of Car Ownership

No of Cars/Vans	50-64		65+ Years		1 Person Household (65+)	
	No	%	No	%	No	%
0	81	14	189	46	138	72
1	204	36	161	39	51	27
2	284	50	62	15	2	1
Total	569	100	412	100	191	100

(Source - Richmond Upon Thames Output Areas 22C and 22E)

9.15 It is expected that each resident would have 8-10 hours of care per week. However, the facility and management provide 24hr care if required.

9.16 The previous correspondence received from the Highway Officer stated that there are no precise standards when determining a required level of parking for extra care units. Therefore, car parking for the Extra Care apartments has been based on the following factors:

- Lower car ownership among Platinum Skies existing residents;
- Local Census data on car ownership (Table 6);

- Frequent 24 hour bus services serving Teddington High Street;
- Parking stress surveys showing a higher level of stress on Udney Park Road (Plot B & C) than Cromwell Road or Kingston Lane Plot A (discussed later in the report); and
- The availability of a pool car/car share facility.

9.17 The following Table 7 has been prepared which summarises the proposed level of car parking to serve the extra care apartments.

Table 7: Car Parking Spaces

Land Use	Car Parking Spaces
Plot A - 92 Apartments	63 underground + 10 at grade
Plot B - 7 Apartments (one of which is visitors)	7
Plot C - 9 Apartments	8

9.18 With regards to Plot A, four of the ten 'at grade' spaces will be allocated as staff parking.

9.19 Plots A, B and C will provide parking at 0.81 spaces per unit (overall).

9.20 The Parking Stress Survey undertaken as part of this assessment, and discussed later in the Report, demonstrates that there is a high level of parking stress on Udney Park Road, approximately 85% over the 3 days surveyed (a peak of 94%).

9.21 In order to ensure the proposed development does not add to on-street parking demand, an increased amount of parking provision has been provided for Plots B and C (both accessed on Udney Park Road), to ensure there is no overspill parking.

9.22 Parking provision for the Extra Care Apartments follows the Mayor of London's desire to prevent excessive car parking provision as mentioned in Policy 6.13 Parking of the London Plan, which states:

> '*The Mayor wishes to see an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use'.*

Extra Care Apartments – Disabled Car Parking & Electric Charging Points

9.23 The car parking standards contained within the London Plan state that '*adequate parking spaces for disabled people must be provided preferably on site'* and refers to two additional documents, namely the Housing Supplementary Planning Guidance 2012, and Accessible London 2014 (London Plan Policy 3.8).

9.24 Page 79 of the Housing Supplementary Guidance 2012, states that *'each designated wheelchair accessible dwelling should have a car parking space'.* An extract of this document is attached at **Appendix 14**.

9.25 Accessible London 2014 (London Plan Policy 3.8) states that '*10% per cent of new housing to be designed to be wheelchair acceptable or easily adaptable for residents who are wheelchair users*'. An extract of this document is attached at **Appendix 15**.

9.26 In line with the London Plan Standards, the following disabled parking space allocation will be provided, as shown in Table 8, below.

Table 8: Extra Care Disabled Car Parking Spaces

Land Use	Extra Care Disabled Car Parking Spaces
Plot A- 92 Apartments	9
Plot B - 7 Apartments (one of which is visitors)	2
Plot C - 9 Apartments	2

9.27 With regards to electrical charging points, the London Plan requires developments in all parts of London to *'ensure that 1 in 5 spaces (both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles'.*

9.28 Table 9 below shows the electrical charging points to be provided in line with the London Plan.

Table 9: Extra Care Electrical Charging Points

Land Use	Car Parking Spaces with Charging Points
Plot A – 92 Apartments	18
Plot B – 7 Apartments (one of which is visitors)	2
Plot C – 9 Apartments	2

Extra Care Apartments – Cycling Parking

9.29 Sheltered housing cycle parking within the Local Plan Review follows the same standards as set out within the London Plan which requires 1 space per 5 staff (long-stay parking), and 1 space per 20 bedrooms (short-stay parking).

9.30 To encourage cycling, an over provision will be provided for all apartments.

GP Surgery – Car Parking

9.31 A new purpose built GP Surgery is proposed, and will be accessed directly from Kingston Lane. The occupiers of the existing surgery will be relocated to the application site. The existing surgery is located along Park Road and is within a controlled parking zone (CPZ), and has no on-site parking.

9.32 Parking provision for the GP Surgery will be provided in line with Richmond Borough Council's latest advice, and as per Council's Local Plan Review. The Parking Standards from the Local Plan Review state that one space per consulting room should be provided.

9.33 The proposed GP Surgery will contain 12 consulting rooms, and therefore in line with the LPA's request, 12 car parking spaces will be provided.

9.34 Three car parking spaces will have electrical charging points (both active and passive) in line with London Plan requirements.

GP Surgery – Disabled Parking

9.35 London Plan paragraph 6A.2 states:

> *"Non-residential elements of a development should provide at least one accessible on or off street car parking bay designated for Blue Badge holders, even if no general parking is provided. Any development providing*

off-street parking should provide at least two bays designated for blue badge holders".

9.36 The London Plan requires workplaces to provide one space for each employee who is a disabled motorist, and 5% of the total capacity should be allocated for visiting disabled motorists.

9.37 A further 5% of the total capacity should have enlarged standard spaces for future provision. An enlarged standard space is defined as 3.6m wide by 6m long that can be adapted to be parking spaces designated for use by disabled people to reflect changes in local population needs and allow for flexibility of provision in the future.

GP Surgery – Cycle Parking

9.38 The Local Plan Review states that cycle parking for GP Surgeries should follow requirement set out within the London Plan.

9.39 The cycle parking requirement for GP Surgeries has been summarised in the following Table 10, and for reference, the London Plan cycle parking standards are attached at **Appendix 16**.

Table 10: GP Surgery Requirements

Land Use	Long Stay	Short Stay
Health Centre, including dentists	1 space per 5 staff	1 space per 3 staff

9.40 Cycle parking provided for staff will be suitable for long stay parking as recommended in the London Plan, paragraph 6A.11.

9.41 Short stay cycle parking will be available for visitors to the site and will be located within 15 metres of the entrance as recommended in London Plan, paragraph 6A.13.

Community Sports Ground – Car Parking

9.42 Within the Pre-App report, the Local Authority requested that the pavilion would require '*1 space per 25m^2, parking facilities for coaches, off street servicing and drop off area*'.

9.43 Subsequent to receiving the pre-app advice, the Local Authority have stated that they are adopting the advice within the Local Plan Review. Sports pitches are regarded as 'other use' in the Local Plan Review and parking provision is determined on a case by case basis.

9.44 The following Table 11 provides a breakdown of the number of spaces proposed to serve the pavilion, tennis courts and football pitches.

Table 11: Community Sports Ground Parking Provision

Land Use	Parking provision
Pavilion (909m^2)	37
3 Tennis Courts	9
2 Football Pitches	16
Total	**62**

9.45 Tennis courts require 3 spaces per court in the 2011 LBRT Development Management Plan parking standards, attached at **Appendix 17**.

9.46 The Community Sports Ground will provide 62 car parking spaces. Thirty-seven of these will serve the pavilion at a rate of 1 space per 25m^2, nine spaces will be provided for the three tennis courts, and sixteen spaces will serve the two football pitches.

9.47 Such a level of parking is consistent advice set out within the London Plan (para 6A.8), which states:

> '*In locations with a PTAL of 1-3 provision should be consistent with objectives to reduce congestion and traffic levels and to avoid undermining walking cycling or public transport*'.

9.48 One off-street coach parking space and a drop off area will be provided as requested in the pre-app report.

9.49 Electric charging points will be provided in line with the standards of the London Plan, at a rate of 1 per 5 spaces. Therefore 14 car parking spaces will have both active and passive electric charging points.

Community Sports Ground – Disabled Parking

9.50 The London Plan requires sports facilities to adhere to Sport England's publication 'Accessible Sports Facilities' 2010, when considering disabled parking. An extract of this document is provided at the following Figure 10.

Provision	Clubhouses/pavilions (serving only natural turf pitches)	Clubhouses/pavilions generally	Full-size synthetic pitch	Multi-use games area	Fitness suite	Four-court sports hall	Six-court sports hall	Nine-court sports hall or larger	Cricket indoor	Gymnastics hall	Tennis indoor	Tennis outdoor	Bowls indoor	Bowls outdoor	Table tennis centre	Athletics indoor	Athletics outdoor	20m swimming pool	25m swimming pool	50m swimming pool
Minimum of 2 accessible car parking bays or 6%, whichever is the greater	2	2	2	2	2	4			4	2	4	4	2	4	4	4	4	4	8	
Minimum number of accessible car parking bays or 8% whichever is the greater						❍	6	8	❍		❍	❍	❍		❍	❍	❍	❍	❍	8
Setting-down point adjacent to the entrance	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Key: ● Required ❍ Recommended

Figure 10: Accessible Car Parking Spaces - Requirements

9.51 In line with the requirements set out in the Sport England guidance, nine disabled car parking spaces and a setting point close to the pavilion will be provided.

Table 12: Cromwell Road Disabled

Land Use	Disabled bays required
Pavilion	3 (6% of total provision)
3G Pitch	2
Tennis Courts	4

Community Sports Ground – Cycle Parking

9.52 The London Plan does not state a required cycle parking provision for community sports grounds, therefore the 2011 London Borough of Richmond upon Thames Development Management Plan standards have been considered. A summary of the required cycle parking provision has been provided within the following Table 13, and an extract from the standards has been attached at Appendix 17.

Table 13: Cromwell Road Minimum cycle parking space requirement

Land Use	Car Parking Spaces
Pavilion	4
Football Pitches	12
Tennis Courts	6
Total	**22**

9.53 A minimum of 22 cycle spaces will be provided to serve the community sports ground.

10.0 MEASURES TO INFLUENCE TRAVEL BEHAVIOUR

10.1 It is recognised that the GP Surgery will generate most of the trips throughout the day and during the morning and afternoon periods compared to the other proposed uses on the site.

10.2 The Sustainable Development Unit funded by and accountable to NHS England and Public Health England states on their website:

- *The health and care system accounts for a significant proportion of road traffic in England 5% is attributed to NHS related travel, which is responsible for 13% of the NHS carbon footprint.*

10.3 In order to reduce the impact of the proposal, and encourage more sustainable forms of travel, a Travel Plan will be put in place to ensure the GP Surgery has a nil detriment effect, or indeed a betterment on the surrounding highway network.

10.4 Car parks at the site will have electric charging points in line with standards set out in the London Plan.

10.5 Cycle parking provision will be above the requirements of the London Plan .

11.0 PROPOSED TRAFFIC GENERATION

11.1 Traffic generation has been derived from the TRICS (7.4.1) database. Trip rates have been calculated based on edge of town centre, suburban and edge of town locations in England and Wales. The full TRICS output for all proposed uses is attached at **Appendix 18**.

108 Extra Care Apartments

11.2 The TRICS database does not contain an 'Extra Care' land use category, and as such, the proposed units have been categorised as sheltered housing, for the purpose of this assessment such an approach is considered robust as extra care and sheltered accommodation are similar in the service offered to residents.

11.3 A summary of the calculated traffic generation has been provided in Table 14, below.

Table 14: Two-way Trip Rates – Extra Care

Peak Hours	Vehicle Trip Rate (Per Apartment)			Traffic Generation (108 Apartments)		
	Arr	Dep	Two-way	Arr	Dep	Two-way
0800-0900	0.088	0.076	0.164	10	8	18
1700-1800	0.078	0.084	0.162	8	9	17
Daily (0700-1900)	**1.207**	**1.210**	**2.417**	**130**	**131**	**261**

11.4 The above Table 14 demonstrates that the proposed Extra Care units would generate in the region of 18 two-way movements in the AM and 17 in the PM network peak hour periods. Across the day approximately 261 two-way vehicle movements would be generated. The movements will be split into 3 different accesses utilising two roads, Kingston Lane and Udney Park Road. The largest site (Plot A, 92 units) would therefore generate some 15 and 14 vehicle movements in the network morning and evening peak hour periods respectively. Similarly the remaining sites (Plot B and Plot C) would generate approximately 1-2 movements.

Community Sports Ground

11.5 The TRICS database does not contain a category that includes various sizes of football pitch, tennis courts, pavilion and community space. To provide a robust assessment the sports facilities was assessed individually as, 3 football pitches, 3 tennis courts and a community centre.

11.6 Three 5 a-side pitches were used for traffic generation analysis as one of the full sized pitches will be used for two 5-aside pitches for the purpose of this exercise.

11.7 A summary of the calculated traffic generation has been provided in Table 15, below.

Table 15: Total traffic generation of Community Centre and Sports Fields

Peak Hours	Vehicle Trip Rate			Traffic Generation		
	Arr	Dep	Two-way	Arr	Dep	Two-way
Community Centre (909m²)						
0800-0900	0.439	0.073	0.512	4	1	5
1700-1800	0.238	0.311	0.549	2	3	5
Daily (0700-1900)	4.117	4.038	8.155	37	37	74
Football (3 pitches)						
0800-0900	0.643	0.250	0.893	2	1	3
1700-1800	2.786	0.714	3.500	8	2	10
Daily (0700-1900)	27.964	28.107	56.071	84	84	168
Tennis Courts (3 pitches)						
0800-0900	0.158	0.105	0.263	1	1	2
1700-1800	0.474	0.474	0.948	1	1	2
Daily (0700-1900)	8.054	8.054	17.274	28	24	52
Total						
0800-0900	NA			7	3	10
1700-1800				11	6	17
Daily (0700-1900)				149	145	294

11.8 The above Table 15 demonstrates that the Community Sports Ground would generate approximately 10 two-way movements in the AM and 17 in the PM network peak hours. Across the day approximately 294 two-way movements would be generated.

GP Surgery

11.9 The proposed trip generation is based on responses to a two week survey of trips to Park Road Surgery as requested by the LPA. Patients and staff were asked how they travelled to the existing GP Surgery on Park Road, and how they would travel to the relocated GP Surgery in Kingston Lane. A total of 341 responses from patients and visitors were received. The survey data is attached at **Appendix 19**.

11.10 Table 16 below shows how patients and visitors would travel to the GP Surgery if it was relocated to Kingston Lane, 40% would walk, 18% would travel by public transport (bus/coach/minibus or train), and 37% would travel by car, as a driver or passenger, the remaining 5% would travel by train, cycle or motorcycle.

Table 16: Method of Travel to the GP Surgery at Teddington Sports Ground for Patients and Visitors over two weeks

Method of Travel	Number of Responses	%
Car Driver	101	29.6
Car Passenger	23	6.7
Bus/coach/Minibus	58	17
Train	2	0.6
Motorbike/Moped/Scooter	2	0.6
Bicycle	18	5.3
Taxi	2	0.6
On Foot	135	39.6
Total	**341**	**100**

11.11 Tables 17 and 18 below show the modal split based on results in week 1 and week 2 respectively.

Table 17: Method of Travel to the GP Surgery at Teddington Sports Ground for Patients and Visitors during - Week 1

Method of Travel	Number of Responses	%
Car Driver	70	30.4
Car Passenger	16	7
Bus/coach/Minibus	36	15.7
Train	1	0.4
Motorbike/Moped/Scooter	1	0.4
Bicycle	9	3.9
Taxi	2	0.9
On Foot	95	41.3
Total	**230**	**100**

Table 18: Method of Travel to the GP Surgery at Teddington Sports Ground for Patients and Visitors during - Week 2

Method of Travel	Number of Responses	%
Car Driver	31	27.9
Car Passenger	7	6.3
Bus/coach/Minibus	22	19.8
Train	1	0.9
Motorbike/Moped/Scooter	1	0.9
Bicycle	9	8.1
Taxi	0	0
On Foot	40	36
Total	**111**	**100**

11.12 Most responses were received on day 1 of the survey, in which 22 patients or visitors travelled to the GP Surgery by car. This is approximately 2 – 3 vehicles per hour, based on the GP Surgery's opening hours that day, 0830 – 1830.

11.13 Table 19, below, shows how staff would travel to the GP Surgery if it was relocated to Kingston Lane on average, based on responses received over the two surveyed weeks.

Table 19: Method of Travel to the GP Surgery at Teddington Sports Ground for Staff.

Method of Travel	Number of Staff	%
Car Driver	8	48.5
Car Passenger	1	6.1
Bus	3	14.7
Bicycle	3	17.8
On Foot	3	12.9
Total	**18**	**100**

11.14 The modal split of how patients and visitors travel to the existing GP Surgery is shown below in Table 20. The modal split for week 1 and week 2 are shown in Tables 21 and 22 respectively.

Table 20: Method of Travel to the existing GP Surgery on Park Road for Patients and Visitors over two weeks.

Method of Travel	Number of Responses	%
Car Driver	84	24.6
Car Passenger	37	10.9
Bus/coach/Minibus	21	6.2
Train	7	2.1
Motorbike/Moped/Scooter	2	0.6
Bicycle	12	3.5
Taxi	6	1.8
On Foot	172	50.4
Total	**341**	**100**

Table 21: Method of Travel to the existing GP Surgery on Park Road for Patients and Visitors during - Week 1

Method of Travel	Number of Responses	%
Car Driver	56	24
Car Passenger	22	9.4
Bus/coach/Minibus	13	5.6
Train	6	2.6
Motorbike/Moped/Scooter	2	0.9
Bicycle	6	2.6
Taxi	2	0.9
On Foot	126	54.1
Total	**233**	**100**

Table 22: Method of Travel to the existing GP Surgery on Park Road for Patients and Visitors during - Week 2

Method of Travel	Number of Responses	%
Car Driver	28	25.9
Car Passenger	15	13.9
Bus/coach/Minibus	8	7.4
Train	1	0.9
Motorbike/Moped/Scooter	0	0
Bicycle	6	5.6
Taxi	4	3.7
On Foot	46	42.6
Total	**108**	**100**

11.15 Table 23, below, shows how staff currently travelled on average to the GP Surgery on Park Road across the two weeks surveyed.

Table 23: Method of Travel to the existing GP Surgery on Park Road for Staff

Method of Travel	Number of Staff	%
Car Driver	8	48.5
Car Passenger	1	6.1
Bus	4	20.9
Bicycle	3	17.8
On Foot	2	6.7
Total	**18**	**100**

11.16 Traffic generated by the GP Surgery has been calculated using the multi modal trip generation from the TRICS (7.4.2) database. The full TRICS output is attached at Appendix 18.

11.17 The multi modal split of GP Surgery trips is based on the responses of patients, visitors and staff, surveyed over a two week period about their method of travel to the GP Surgery, if it was relocated to Kingston Lane.

11.18 The following Table 24 provides a summary of the likely level of traffic generated by the GP surgery, based on the multi-modal traffic generation from the TRICS database, and the modal split as derived from the two-week survey.

Table 24: Traffic Generation (GP Surgery)

Peak Hours	Arrivals	Departures	Two-Way
0800-0900	19	9	28
1700-1800	9	14	23
Daily	**159**	**159**	**318**

Net Traffic Generation

11.19 In order to determine the total level of traffic generated by the proposal, the figures within Tables 14, 15 and 24 have been combined in provide the net level of traffic generation during the peak hour periods, and across the day.

11.20 The net level of traffic generation is provided in Table 25, below.

Table 25: Total Traffic Generation of Proposal

Peak Hours	Traffic Generation
0800-0900	56
1700-1800	57
Daily	**873**

11.21 The above Table 25 demonstrates that the proposal, as a whole, will generate in the region of 56-57 two-way movements during the network peak hour periods, and 873 two-way daily movements.

11.22 Such a level equates to approximately one extra vehicle every minute during the peak hour periods, and it is important to note that vehicles will be distributed on to three roads; Udney Park Road, Kingston Lane and Cromwell Road. Furthermore, 50% of the flows calculated in Table 25 are already on the highway network.

11.23 The level of traffic generated by the proposal will therefore not have a detrimental impact on the operation of the local highway network, and cannot be considered as having a 'severe' impact, as per the terms of the NPPF.

12.0 TRAFFIC DISTRIBUTION

12.1 Traffic distribution from the site has been based on the existing distribution determined from analysis of the junction surveys.

12.2 The likely traffic distribution during the AM and PM peaks is shown on the drawings attached at **Appendix 20**.

12.3 Traffic from the sports ground will be fairly evenly distributed on Cromwell Road in both directions. The majority of westbound traffic will enter Teddington High Street via Station Road rather than the surrounding residential roads. The majority of eastbound traffic will enter Kingston Road via Kingston Lane.

13.0 COMMITTED DEVELOPMENT

13.1 The site has been assessed taking on board other committed development. These sites are based on an Environmental Impact Assessment Screening Report conducted by Barton Wilmore. The following figure 11 is an extract from the Report.

Scheme	Description	Distance from Site	Status
Teddington Studios, Broom Road, Teddington (Ref. 14/0914/FUL)	Demolition of the existing buildings with the exception of Weir Cottage. Erection of part four/part five/part six/part seven storey building to provide 213 flats. Erection of 6 three storey houses to Broom Road frontage. Use of Weir Cottage for residential purposes. Provision of 258 car parking spaces at basement and ground level. Closure of existing access and provision of two new access from Broom Road, provision of publicly accessible riverside walk together with cycle parking and landscaping.	Approximately 400m to the north east of the site.	Approved (December 2014)
	Amendment to approved application 14/0914/FUL proposing Erection of extension to Block E to provide three more affordable housing units and related parking (Ref. 16/2875/FUL).		Approved (April 2017)
	Variation of approved drawings attached to 14/0914/FUL to allow for the development of Block B as two blocks and an increase in the overall number of units from 220 to 235 and minor changes to the riverside walkway. To allow changes to the internal layout and the riverside walkway as shown on the submitted drawings.		Pending Consideration
2 High Street, Teddington (Ref. 16/2647/FUL)	Demolition of the existing office (B1a) building (395 sq.m) and the erection of a part six / five-storey mixed-use building with a ground floor office / commercial unit (300 sq.m) and 22 (11 x 1 and 11 x 2 bed) affordable 'shared ownership' apartments above with 10 car parking provided at basement level including associated works.	Approx. 430m to the north west of the site	Pending consideration
St Michaels Convent, 56 Ham Common (Ref. 16/3552/FUL)	Conversion and extension of the existing convent buildings (following demolition of some mid-20th century extensions), together with new build apartments and houses, to provide a total of 23 residential retirement units, an estate managers office and meeting rooms, parking and associated works within a landscaped site, with access via Ham Common.	Approx. 1.7km to the north east of the site	Pending consideration
63 – 71 High Street, Hampton Hill (Ref. 16/4553/FUL)	Demolition of existing buildings on site and erection of a group of part three, part four storey buildings around outer and inner landscaped courts comprising 8 townhouses and 31 apartments and two non-residential units on the High Street frontage (102.5m² GIA) and (131.5m² GIA) for use as A1(retail: non-food) and/or A3 (cafe) and/or B1 (offices) and/or D1 (clinics / creche / non-residential education and training centre) together with the formation of a basement to provide ancillary car parking (45 spaces) cycle storage (65 spaces) refuse storage rooms and plant rooms.	Approx. 2km to the west of the site	Pending consideration
Twickenham Railway Station, London Road (Ref. 10/3465/FUL)	Detailed application for the demolition of existing station building and access gantries to the platforms and redevelopment to provide; a podium across the existing railway lines; a new station concourse with stair and lifts to platform level; three buildings ranging in height between 8 storeys and 3 storeys comprising 165 residential units, 734 sqm of flexible Use Class A1 (shops), A2 (financial and professional services), A3 (restaurant and café) and D2 (leisure) floorspace, plant space including a combined heat and power plant, and green roofs; sustainable transport facilities to include a taxi rank, kiss and ride and car club spaces, 35 commuter car parking spaces (including disabled spaces), residents disabled spaces, delivery and servicing spaces, electric car charging points, 250 cycle spaces for commuters and 208 cycle spaces for residents; provision of a new station plaza, river walkway including children's playspace, soft and hard landscaping; and off site highway works to include the relocation of the existing bus stop.	Approx. 2.7km to the north of the site.	Pending consideration
Police Station 60-68 Station Road, Hampton (Ref. 16/0606/FUL)	Full application for the retention of former police station building with partial demolition of the rear wings of the police station and demolition of the rear garages and the construction of 28 residential units (4 x 1 bedroom, 12 x 2 bedroom, 10 x 3 bedroom and 2 x 4 bedroom) and associated access, servicing, cycle parking and landscaping (The proposal has been amended to include setting back the top floor away from the eastern boundary of the site; roof design on Plots 24 to 28 amended; and amendments to unit mix).	Approx. 2.8km to the south west of the site	Pending consideration

Figure 11: Committed Developments

13.2 From the 6 schemes listed in Figure 11, the top 2 were deemed to have an impact on traffic generation in the immediate vicinity of the site. The other schemes have little or no impact on the application site, either due to the size or distance from the application site.

13.3 At Teddington Studios, 219 flats have been approved for development. The site is approximately 400m to the north east of the proposal.

13.4 At 2 High Street Teddington, 23 social/affordable flats and one commercial unit of (300m^2) is proposed.

13.5 The TRICS database has again been interrogated to provide information on traffic generated at the two developments, as traffic generation figures for either scheme were not available online. Table 26 and 27 below show the likely traffic generation from the committed schemes. The TRICS output for committed schemes is attached at **Appendix 21**.

Table 26: Teddington Studios Traffic Generation

Peak Hours	Vehicle Trip Rate			Traffic Generation (29 Flats)		
	Arr	Dep	Two-way	Arr	Dep	Two-way
0800-0900	0.031	0.086	0.117	7	19	26
1700-1800	0.075	0.043	0.118	16	9	25
Daily (0700-1900)	**0.601**	**0.614**	**1.215**	**132**	**134**	**266**

Table 27: High Street Traffic Generation

Peak Hours	Vehicle Trip Rate			Traffic Generation		
	Arr	Dep	Two-way	Arr	Dep	Two-way
23 Flats						
0800-0900	0.060	0.182	0.242	1	4	5
1700-1800	0.074	0.051	0.125	2	1	4
Daily (0700-1900)	0.774	0.889	1.663	18	20	38
Commercial Unit (300sqm)						
0800-0900	1.237	1.031	2.268	4	3	7
1700-1800	1.340	1.753	3.093	4	5	9
Daily (0700-1900)	18.970	18.662	37.632	57	56	113
Total						
0800-0900	NA			5	7	12
1700-1800				6	6	12
Daily (0700-1900)				75	76	141

13.6 No traffic distribution was undertaken in relation to these schemes, and so based on local knowledge, and with consideration to the traffic surveys, it is considered that traffic generation from the committed developments will have a negligible impact on the proposed development.

14.0 NON MOTORISED USERS

14.1 The proposed development has considered the requirements of non-motorised users (NMUs) throughout the site and on the streets immediately adjacent.

14.2 Walking is used to access a wide variety of destinations including educational facilities, shops and places of work, normally within a range of up to 2 miles. Walking and rambling can also be undertaken as a leisure activity, often over longer distances.

14.3 Careful design at crossings is a key aspect of providing safe and attractive NMU routes. The document design Manual for Roads and Bridges Part 4 TA91/05, Provision for Non-Motorised Users states that:

14.4 From an NMU perspective, crossing facilities should aim to have the following characteristics (based on principles developed in providing for Journeys on Foot (IHT 2000).

- **Safety and Comfort** - users should feel safe and should not feel intimidated by motorised traffic. The speed of approaching vehicles should be taken into account.
- **Location** – where safety considerations permit, crossing points should also coincide with desire lines. This is particularly important on identifiable local routes such as school routes or access to country parks.
- **Convenience** – there should be appropriate opportunity to cross quickly and efficiently at designated crossing points without NMUs being required to wait for long periods. In addition, long stretches of enclosing guardrails at crossing should be avoided.
- **Capacity** – crossings should be wide enough to accommodate peak demand and, in particular, signalled crossing should respond quickly and safely to demand.
- **Opportunity** – crossings should respond quickly and safely to demand from NMUs.

14.5 Cromwell Road will benefit NMUs with the proposed installation of a pedestrian crossing. The proposed crossing would be situated within the vicinity of Collis

Primary School, and feature tactile tiles and dropped kerbs in line with DMRB recommendations.

14.6 Community access to the site has historically been low as part of our proposals we seek to provide approximately 39,000m^2 of land for the local community. The loss of playing fields will meet Sport England exception tests 4 and 5.

14.7 Sport England exception E4 states:

- The playing field or playing fields which would be lost as a result of the proposed development would be replaced by a playing field or playing fields of an equivalent or greater quantity, in a suitable location and subject to equivalent or better management arrangements prior to the commencement of development.

14.8 Sport England exception E5 states:

- The proposed development is for an indoor or outdoor sports facility, the provision of which would be of sufficient benefit to the development of sport as to outweigh the detriment caused by the loss of the playing field or playing fields.

14.9 The addition of a public park playground, pavilion, community sports ground and courtyard gardens will make a significant contribution to the Borough's unique character, openness and the wider Green Infrastructure network, and assist in meeting the wider sports needs of this Borough as well as neighbouring boroughs.

14.10 Cycle parking has been carefully planned to promote cycling with parking provision above London Plan Standards in convenient and well-lit locations.

14.11 Design of the public park will ensure it is desirable for NMUs with disabilities by following guidance in the "Inclusive Mobility" document as recommended by DMRB Provision for Non-Motorised Users.

15.0 SUMMARY AND CONCLUSIONS

15.1 Bellamy Roberts LLP has been instructed by Quantum Group to prepare a Transport Assessment to review proposals to provide 108 Extra Care Apartments, Sports Ground, Community Pavilion and GP Surgery at the former ICL Sports Ground, Teddington.

15.2 The site is situated between Udney Park Road, Cromwell Road and Kingston Lane approximately 200m from Teddington High Street.

15.3 The site and surrounding area has been visited, and turning count traffic surveys have been undertaken in order to prepare this Assessment.

15.4 Bellamy Roberts commissioned traffic surveys between 0700-1900 on a typical school day and parking surveys using the Lambeth Council methodology on the surrounding junctions of the site. Surveys were undertaken over a two week period for the GP Surgery.

15.5 Traffic generated by the relocated GP Surgery, new apartments, community pavilion and sports ground are not expected to significantly impact on the local highway network, and visibility at the site accesses can be provided in line with current standards.

15.6 Improvements are proposed to Cromwell Road, with the addition of a pedestrian crossing near Collis Primary School.

15.7 The proposals provide both car and cycle parking and electric charging points in line with the requirement to follow the Local Plan Review and London Plan Standards.

15.8 The findings of this Transport Assessment suggest there are no constraints that should prevent the development of this site.

APPENDICES

APPENDIX 1

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DEVELOPMENT PROPOSALS AT
TEDDINGTON SPORTS FIELDS,
CROMWELL ROAD
TEDDINGTON

TRANSPORT ASSESSMENT SCOPING NOTE

on behalf of
Quantum Limited

TB/4839/SN.1

May 2016

Partners:
GD Bellamy BSc CEng MICE
IT Roberts MCIHT
Associate:
TEN Bright BSc (Hons) MSc MCIHT

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CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 Bellamy Roberts LLP has been commissioned by Quantum Ltd. to provide highway and transport advice in connection with proposals to redevelop the existing Teddington Sports Pitches at Cromwell Road, Teddington. A site location plan is at **Appendix 1**.

1.2 The proposals will comprise extra care units and a care home. Extra Care units have specific features to distinguish them from Category 2, Sheltered Housing, as defined by the Department of Health (Models of Extra-care and Retirement Communities, August 2004). These are defined as :

- Self-contained units incorporating designated facilities and assistance technology to facilitate independence.
- Provision of an appropriate package of care, in the individuals own dwelling to a high level if required.
- Catering facilities with one or more meals available each day.
- More comprehensive and extensive communal facilities than Category 2 Sheltered.
- Staff offices and facilities, plus domestic support services.
- Mobility and access assistance, such as communal buggies or shared car pool.

1.3 The nature of the facility is such that people usually move to the site when they are no longer able to live on their own, and their care requirements are such that they need to have assistance in completing every-day tasks. More often than not, these requirements will mean that they are no longer able to drive.

1.4 The proposed land use provides benefits in terms of minimising any traffic impact during the network peak hours. Residents within the site will be unlikely to utilise a car on a day to day basis, and when they do they are likely to avoid peak periods. The shift patterns for staff at the site can also be controlled such that change over does not occur during sensitive hours of the day.

1.5 This document outlines the scope of any future Transport Assessment and identifies the evidence base that will be used to assess the impact of the development on the surrounding highway network.

1.6 The principal objectives of this document are as follows:

i) to identify the scale of analysis that should be undertaken and what issues should be addressed;
ii) to identify what methods and approaches should be adopted;
iii) to identify how traffic impact can be quantified;
iv) to identify how traffic impact can be ameliorated.

1.7 The document is set out under the following headings in accordance with the Chartered Institute of Highway and Transportation (CIHT) Guidelines on Traffic Impact Assessment.

- Existing Conditions
- Traffic Data and Surveys
- Proposed Development
- Modal Choice/Trip Attraction
- Trip Distribution & Assignment
- Assessment years
- Highway Impact
- Road Safety
- Internal Layout
- Parking Provision
- Pedestrians/Cyclists/People with Disabilities

2.0 EXISTING CONDITIONS

2.1 The Transport Assessment (TA) will provide detailed description of the sites location in relation to the surrounding highway network and neighbouring landmarks. It will identify land uses situated in the vicinity of the site, including Teddington High Street to the immediate north and residential uses in close proximity.

2.2 Description of local highway conditions, road and footway widths, parking restrictions and street lighting. Provide a detailed review of local sustainable transport connections including by foot, cycle, public transport. Consideration will be given to the need to provide a Non Mortised User Audit or Pedestrian User Audit under separate cover.

2.3 Outline permitted and existing land uses on site, existing site access arrangements. Review any neighbouring site allocations within the Local Development Framework.

2.4 Baseline transport data to include:

i) Existing trip generation
ii) Existing public transport facilities Inc. PTAL Level
iii) Existing pedestrian and cycle facilities including Isochrones
iv) Current traffic flows
v) Current parking restrictions and parking stress
vi) Critical links and junctions
vii) Accident statistics 5 years
viii) Planned Highway Authority improvements
ix) Identify network peak periods
x) Identify principal road users i.e. local residents or through traffic

3.0 TRAFFIC DATA AND SURVEYS

3.1 In order to establish the impact of the proposals on the neighbouring highway network a range of traffic surveys have been commissioned. Figure 1 below identifies the video survey locations that have been chosen. These are positioned around the site, allowing an assessment of existing junction capacity to be established to identify the base network conditions. The video surveys will be conducted for a 12 hour period (07:00-19:00), allowing the network peak hours to be identified and traffic flows through the neighbouring residential area during off peak hours, when the network is at its quietest.

3.2 The junctions identified comprise the following locations:

- Junction of **Udney Park Rd/High Street**
- Junction of **Kingston Lane/High Street**
- Junction of **Udney Park Road/Cromwell Road**
- Junction of **Kingston Lane/ Cromwell Road**
- Junction of **Kingston Lane/Kingston Road**
- Junction of **Cromwell Road and A313**

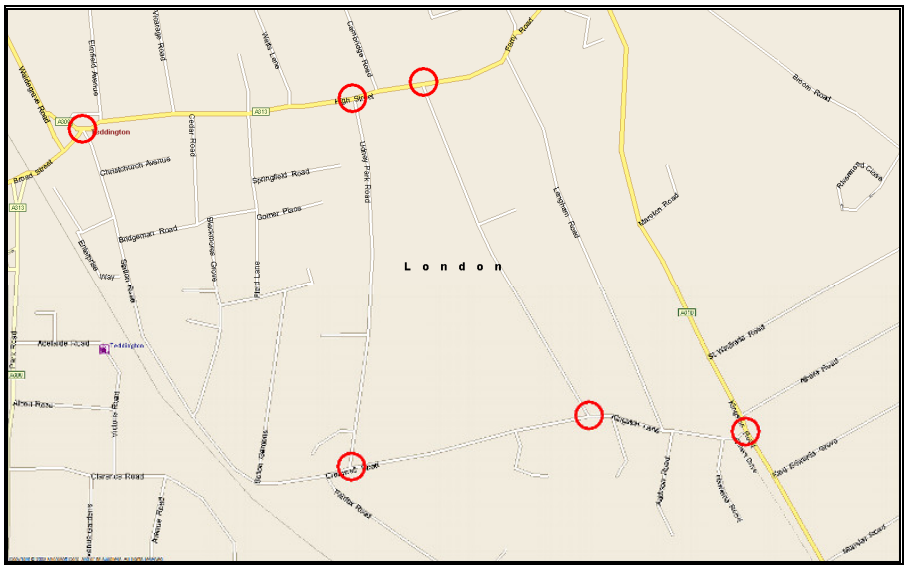

Figure 1: Video Survey Locations

3.3 The area immediately surrounding the site is predominantly residential and as such during the off peak period traffic flows appear low. The majority of traffic passing through the wider area utilises Teddington High Street and Kingston Road. Parking is an issue with both Udney Park Road and to a lesser degree Kingston Lane. Automatic Number Plate Recognition Surveys (ANPRS) will be undertaken to establish if traffic using these roads, during peak times, comprise local residents or traffic traveling between the High Street and Kingston Road, or vice versa. Figure 2 below identifies the highway links that will be assessed using the ANPRS.

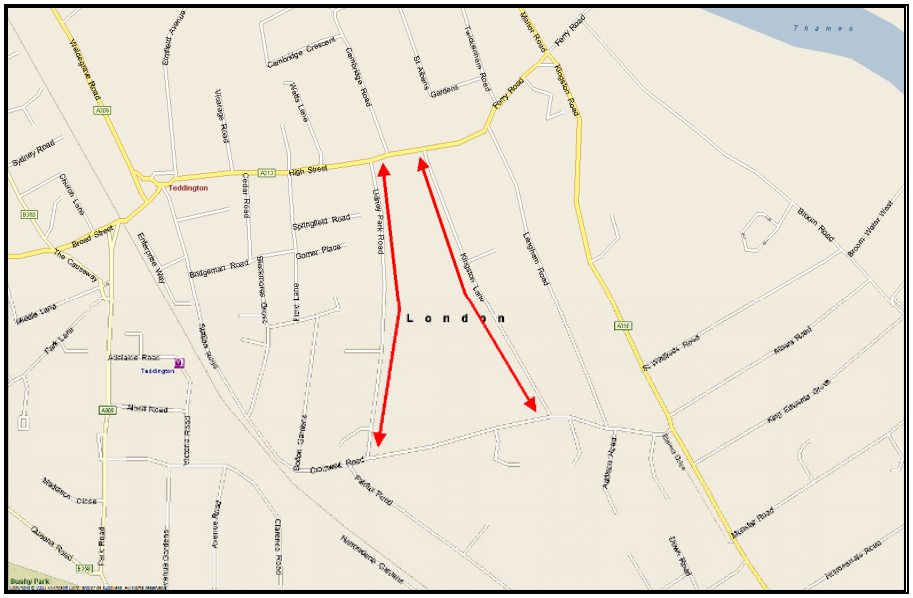

Figure 2: Automatic Number Plate Recognition Survey

3.4 In addition to the above surveys, an onstreet parking survey will be conducted in compliance with Richmond Borough Councils current methodology. The surveys will be provided in map form with spaces and parked cars clearly noted. Also indicated on the survey map will be the date and time of the survey and whether the area is within a CPZ or not. All parking restrictions on street will be noted Double/Single Yellow Lines (D/SYL's), bus lay-by's, kerb build outs, legal footway parking, dropped kerbs, disabled/doctor/loading/car club bays, suspensions/temporary restriction, skips, road works, narrow roads, where parking is not possible or subject to flooding. An inventory sheet will be provided showing lengths of parking and restrictions will all be individually dimensioned to determine the number of bays in the area. If there are marked bays on street these will be shown and dimensioned on the map. The space between crossovers will also be dimensioned whilst areas of less than 5.5m will not be included in the calculations.

3.5 The first 7.5m of a junction will be omitted, but cars parked within will be considered in the calculations as contributing to on street stress. Illegally parked cars will be shown on the plan and these will be included in the stress calculation. Surveys undertaken within CPZ's during CPZ hours will need to clearly define

various types of bays (resident permit holders/shared use bays/Business Bays etc).

3.6 The above information may be tabulated, but this table will reflect the information on the map rather than a measured calculation of cars parked against bay lengths divisible by 5.5m. Available bays on street will be calculated using the inventory sheet and 5.5m bay lengths. X's will be counted as parked cars. Tabulated results should be by road and include a 'Total' Column.

3.7 The area to be encompassed by the parking survey is identified in Figure 3. This comprises a distance of 200m from the site, in accordance with Richmond Borough Council requirements.

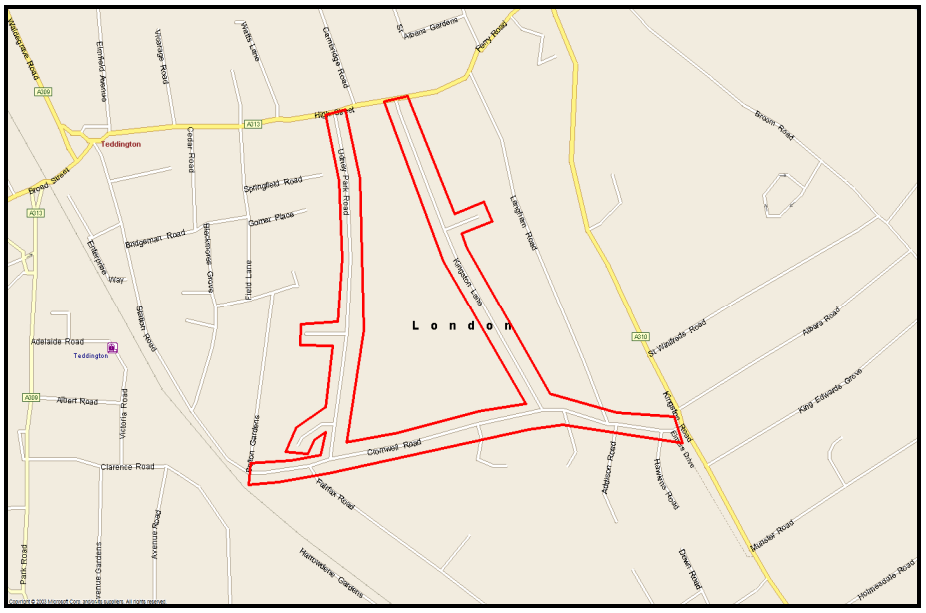

Figure 3: Car Parking Survey Location

4.0 PROPOSED DEVELOPMENT

4.1 The Transport Assessment will identify the key parameters of the proposals including current planning policies affecting the site, where these may have a bearing on current and future traffic flows. The development description will comprise:

- Land use mix
- Development size
- Site Area
- Number of employees
- Shift patterns
- Proposed access arrangement
- Servicing arrangement
- Proposed parking strategy
- Development phasing

4.2 At this stage the final land use mix is unknown, however it is likely to comprise extra care accommodation and a care home. In addition the scheme will retain and upgrade existing leisure uses on the southern portion of the site.

4.3 Vehicular access to the site will be gained from 3 separate points thereby diluting any potential traffic impact on the neighbouring network. The leisure uses will have a dedicated access from Cromwell Road, at the approximate location of an existing maintenance entrance. The extra care units and care home, will be accessed from either Udney Road or Kingston Lane, with a link between these roads provided through the site.

4.4 Due to existing on street parking issues on Udney Road and Kingston Lane (north), consideration will be given to restricting movements to and from the north, thereby creating left in/left out junction arrangements at these access points.

5.0 MODAL CHOICE/TRIP ATTRACTION

5.1 In order to consider the impact of the development some estimation needs to be made of the likely trip rate. These estimates will be selected to address both all day movements and hourly flow variations, the latter being required to identify the development peak and the volume during the surrounding network peak hour.

5.2 The trip rate for the development site will be calculated using the TRICS database, being the industry recognised standard. Consideration will be given to both the Residential/Sheltered Housing and Health/Care Home (Elderly Residential) categories. Multi-modal data will also be selected in this instance with Total Person trips being utilised. The modal split for peak hour movements will then be calculated using 2011 Census data to ensure the results are geographically accurate to site.

6.0 TRIP DISTRIBUTION & ASSIGNMENT

6.1 It is assumed that peak hour flows generated by the site will be staff trips only and as such the 2011 Origin & Destination Census data will be used, with reference to the Nomis dataset WU03EW 'Location of usual residence and place of work by method of travel to work (MSOA)'. This will allow a distribution to be calculated based on existing employment trips into Teddington.

7.0 ASSESSMENT YEARS

7.1 The assessment years are one of the considerations of the forecasting process. The first assessment year to be considered will be the Year of Opening (base year) of the full development. A further design year will be considered that will provide an assessment of the overall forecast demand compared to the ability of the existing network to accommodate traffic over a period of up to ten years or to the end of the Local Plan period, whichever is greater.

7.2 Committed development traffic will be reviewed and assigned to future assessment years as necessary.

7.3 Growth rates will be calculated using the TEMPRO Version 6.2 with reference to the NTM AF09 Dataset.

7.4 Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, it is assumed that further capacity mitigation will not be sought.

8.0 HIGHWAY IMPACT

8.1 Within the TA specific reference will be made to the proposed site access points and the design parameters utilised.

8.2 The highway impact of the proposals will be established using PICADY 9 modelling software. Junctions will be considered on an individual basis with an assessment of queue length, delay and overall reserve capacity.

8.3 Specific regard will be made to the following potential areas of concern:

- at the site entrance where there will be additional turning movements
- on the highway passing the site where there is likely to be increase traffic and the flow may be affected by parked cars
- at other intersections along the highway which might be affected by increase traffic
- at side roads where the ability to find gaps in the traffic may be reduced thereby lengthening delays.

9.0 ROAD SAFETY

9.1 A review will be undertake of the Personal Injury Accidents that have occurred over the past 5 years to identify any historic accident clusters that may indicate deficiencies with the existing highway network.

9.2 A Pedestrian User Audit will be undertaken to establish any deficiencies with the existing footway network in the vicinity of the development site.

9.3 An independent Safety Audit Team will be instructed to review the proposed site access arrangements and the internal site layout

10.0 INTERNAL LAYOUT

10.1 The internal layout of the site will be reviewed to ensure sufficient room is provided for safe servicing of the site, ensuring that service vehicles are able to ingress and egress the site in a forward gear. This will be undertaken using vehicle tracking software for the largest vehicle expected to visit the site.

10.2 Manoeuvring space will be reviewed throughout the car parking arrangement to ensure that adequate space is provided for vehicles to enter and exit spaces with ease, thereby minimising any onsite safety issues that may arise.

10.3 A review of the pedestrian and cycle desire lines through the site will be undertaken and accommodated where possible.

11.0 PARKING

11.1 Car and cycle parking will be provided on site in line with Appendix 4 of the London Borough of Richmond upon Thames – Adopted Development Management Plan. This sets out the following parking requirement:

Car Parking

- Residential Care Home/Nursing Home = 1 space per 5 residents plus 0.5 spaces per unit of staff accommodation.
- Sheltered Housing = 1 space per 4 dwellings plus 1 space for resident wardens unit.

Cycle Parking

- Residential Care Home/Nursing Home = 0.5 spaces per unit of staff accommodation.
- Sheltered Housing = 1 space for resident warden.

12.0 PEDESTRIANS/CYCLISTS/PEOPLE WITH DISABILITIES

Pedestrians

12.1 The determination of pedestrian desire lines can vary from very simple to complex depending on the location of the development site, the road network, the juxtaposition of the major site elements, and the size and significance of the development as an attractor. The location of crossing facilities will need to match movement needs.

12.2 Pedestrians and vehicles often come into conflict at the entrances and exits to developments and as such consideration will need to be given to possible separation of pedestrian and vehicular access routes whilst retaining the most direct pedestrian routes to building entrances.

12.3 As outlined previously in this report the requirement for a Non-Motorised User Audit that will review existing pedestrian routes and any existing deficiencies with the existing footway network, will be considered.

Cyclists

12.4 As outlined in Section 11, cycle parking will be provided on site in line with the adopted cycle parking standard.

People with Disabilities

12.5 Due to the type of end user proposed, detailed consideration will be given to those with disabilities, through both the NMU Audit and the ongoing design of the internal site layout, by the applicant.

APPENDIX 2

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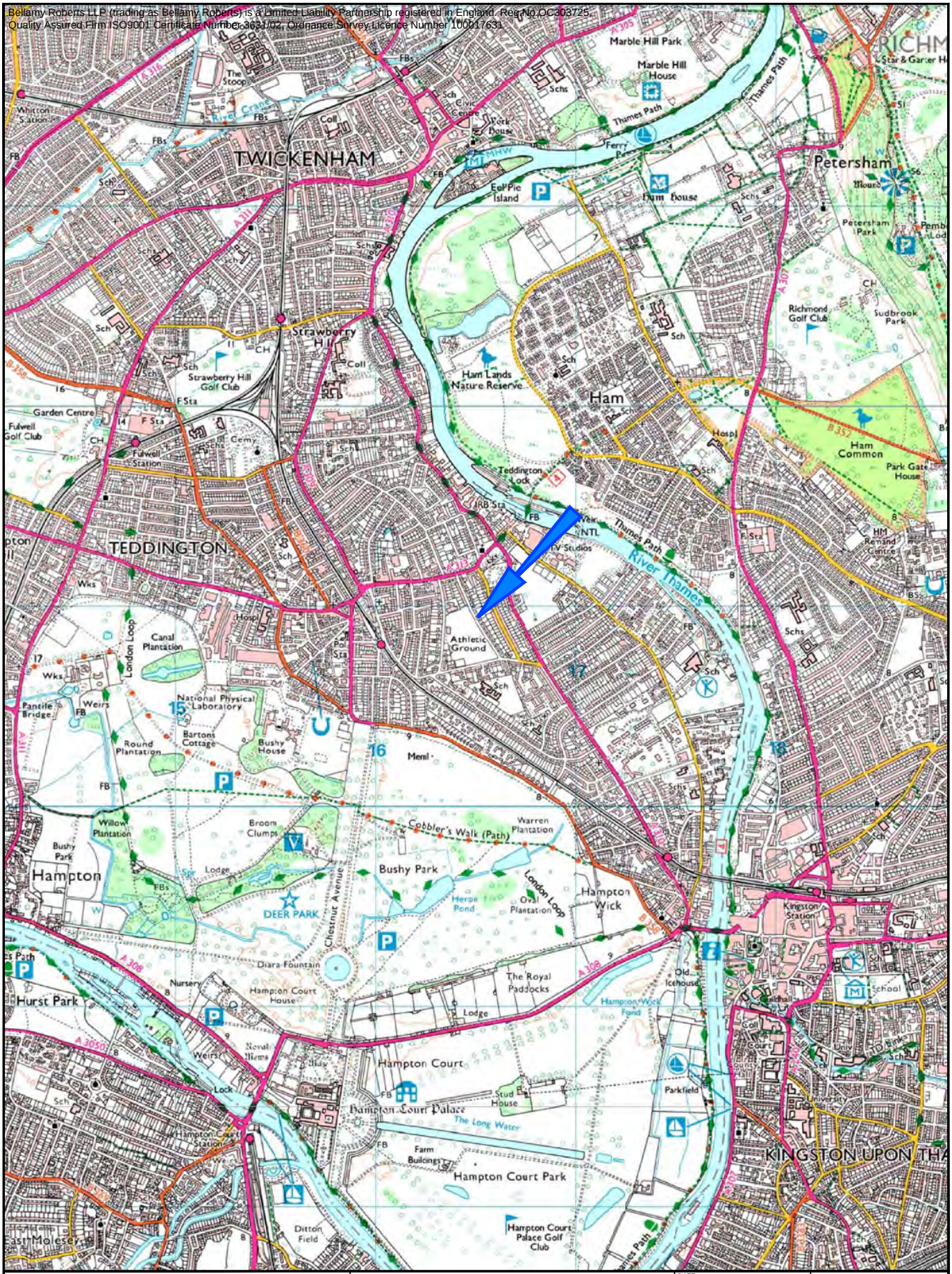

PROJECT: Cromwell Road, Teddington		DATE: 21/04/16	DRAWN BY: ARM
TITLE: Site Location Plan		SCALE: 1:25,000 @ A4	CHK BY: TENB
		CLIENT: Quantum Group	
		DRAWING No.: 4839 / 301	REV No.:

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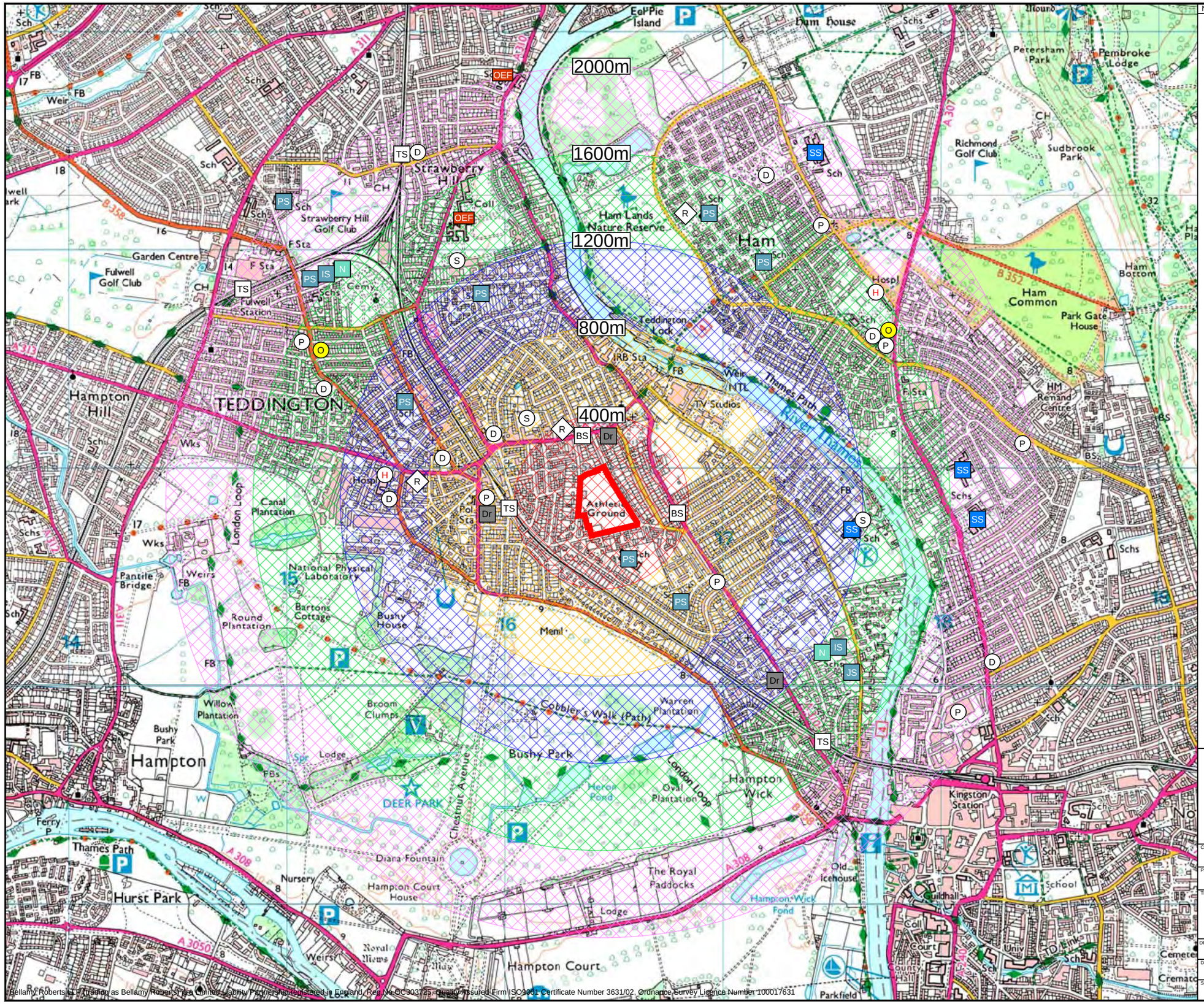
APPENDIX 3



Notes

Walking Isochrones

- 0 - 5 mins
- 5 - 10 mins
- 10 - 15 mins
- 15 - 20 mins
- 20 - 25 mins

Facilities

- D Dentist
- Dr Doctor
- O Optician
- P Pharmacy
- S Sport and Fitness
- H Hospital
- N Nursery
- IS Infant School
- JS Junior School
- PS Primary School
- SS Secondary School
- OEF Other Educational Facility
- R Retail
- TS Train Station
- B Bus Stop

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CLIENT: Quantum Group

PROJECT: Cromwell Road, Teddington

TITLE: Pedestrian Isochrone

DRAWN BY	DESIGN BY	CHK BY
ARM	-	TENB

DATE	DRAWING No.	REV No.
21/04/16	4839 / 302	A

SCALE: NTS @ A3

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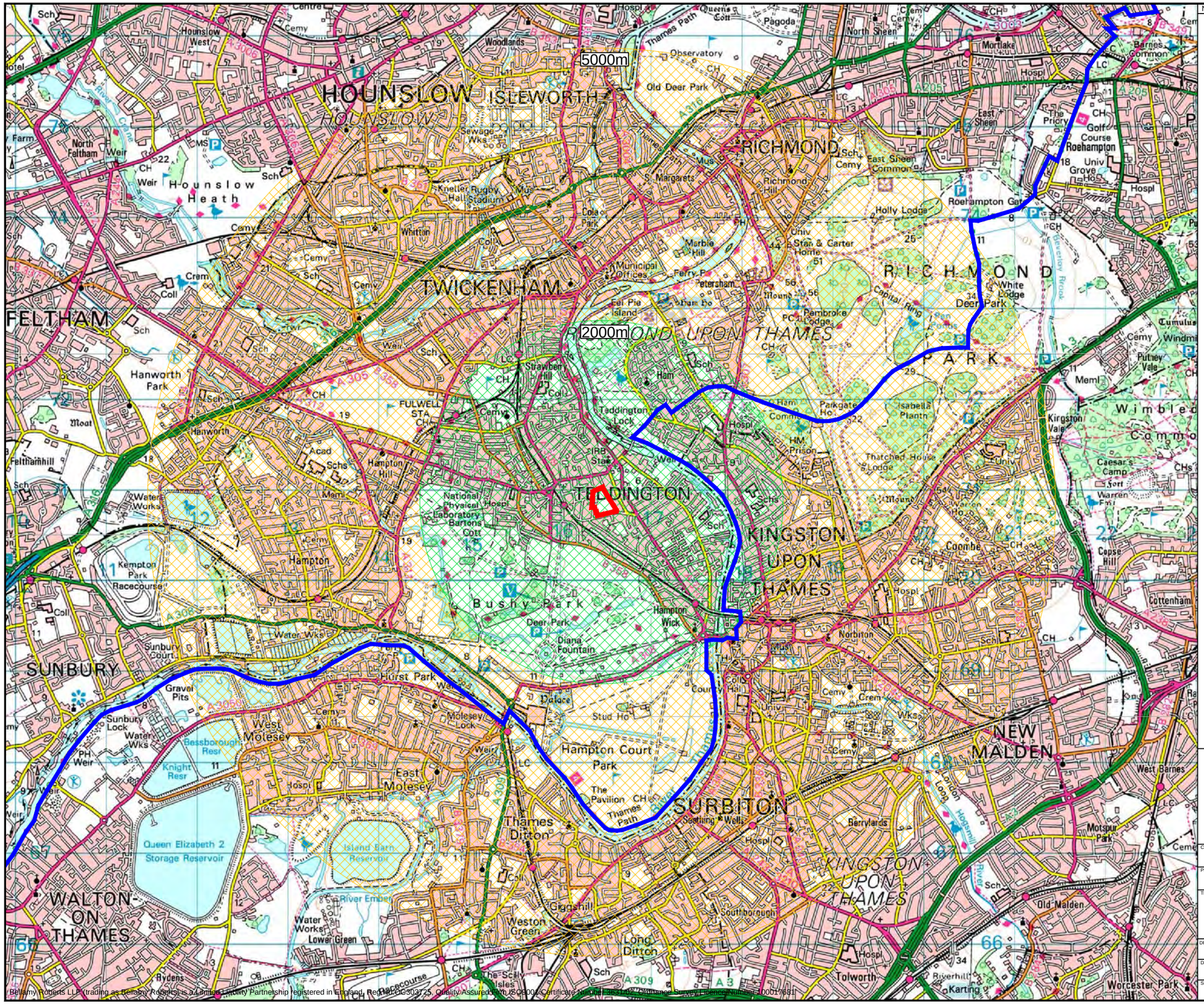
APPENDIX 4



Notes

Cycle Route

Cycling Isochrones

0 - 2km

2 - 5km

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CLIENT: Quantum Group

PROJECT: Cromwell Road, Teddington

TITLE: Cycle Isochrone

DRAWN BY	DESIGN BY	CHK BY
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DATE	DRAWING No.	REV No.
12/07/17	4839 / 306	

SCALE: NTS @ A3

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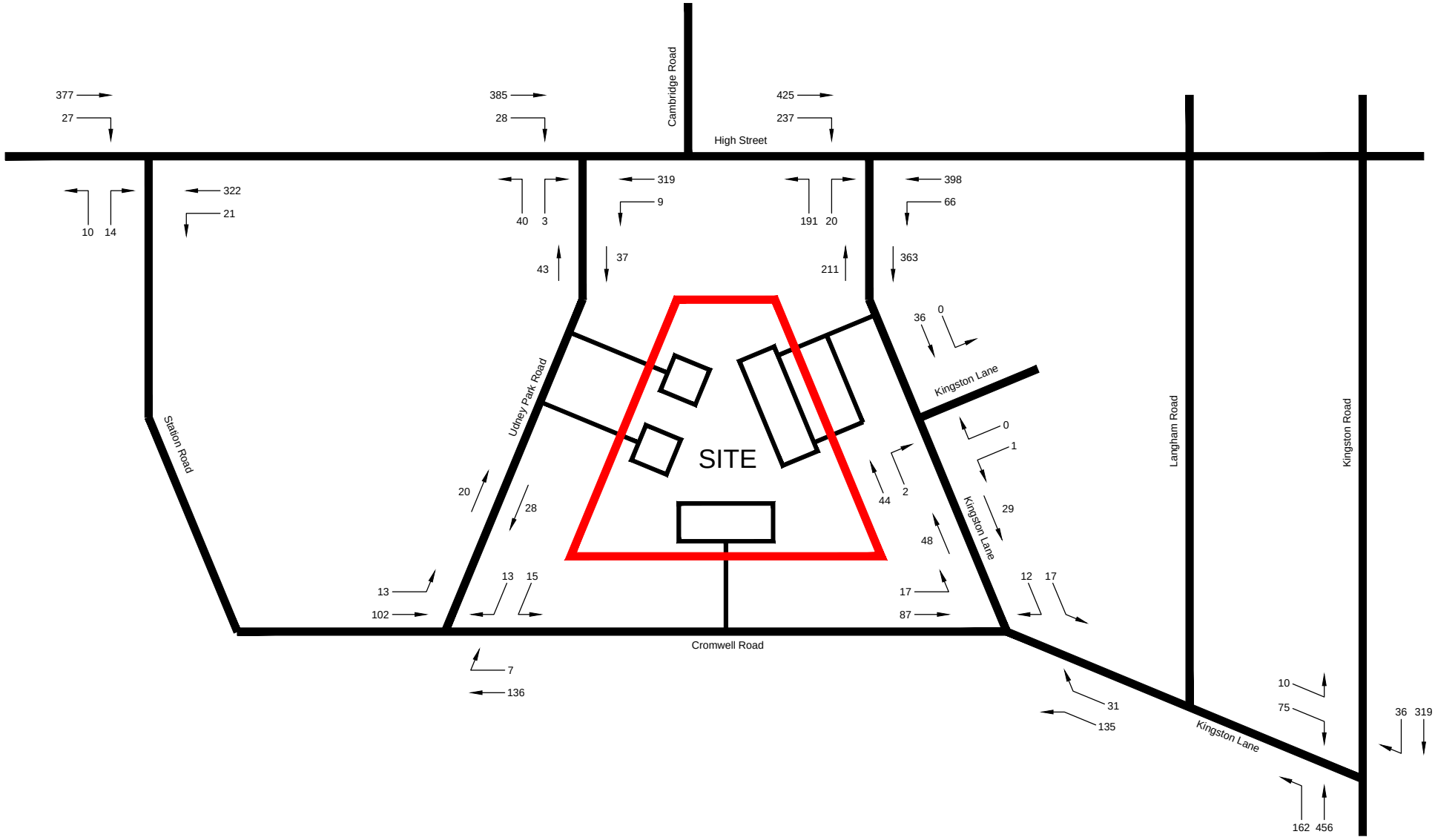
APPENDIX 5



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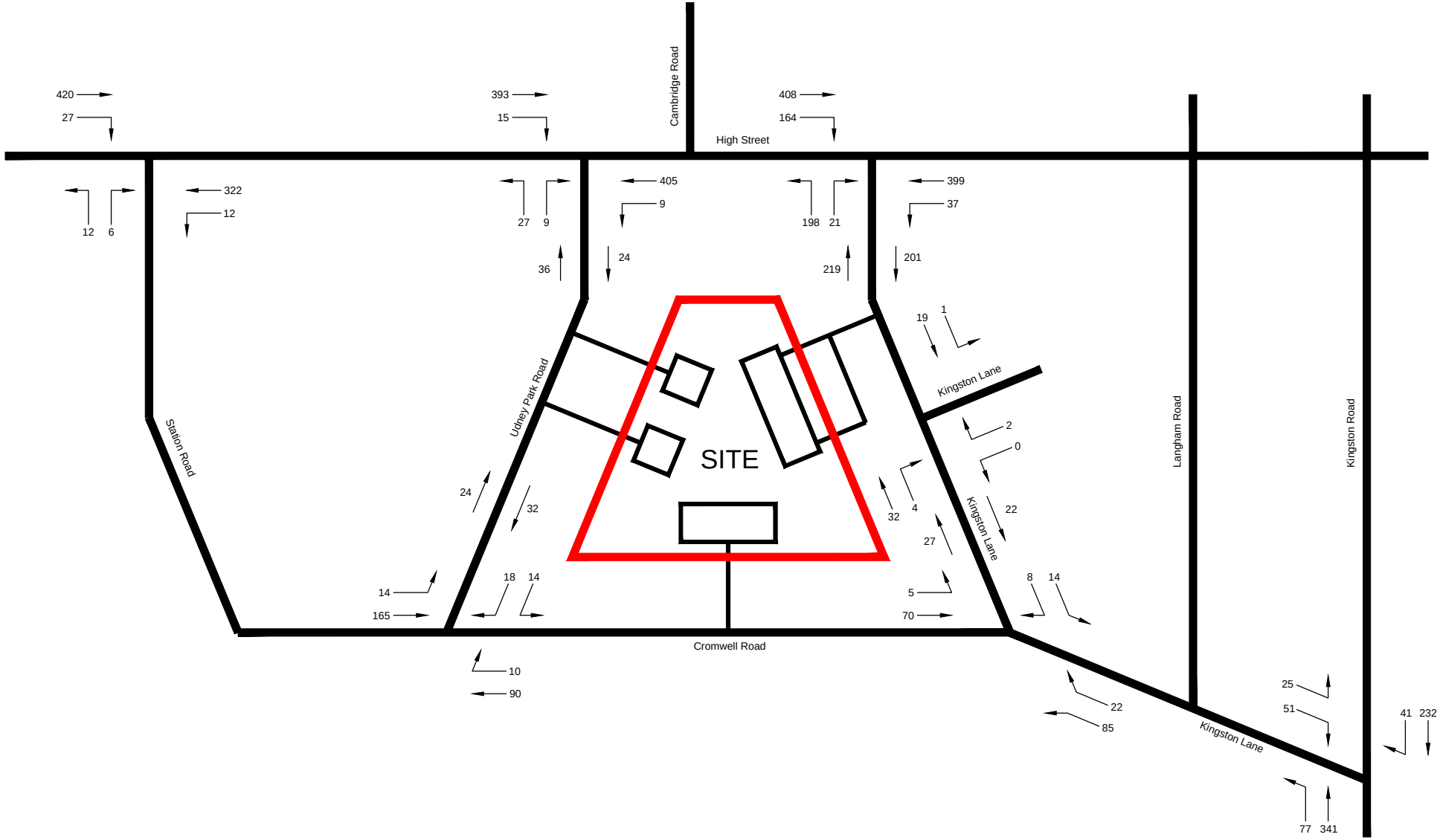
Cromwell Road, Teddington
Base Line Traffic Data
AM Peak



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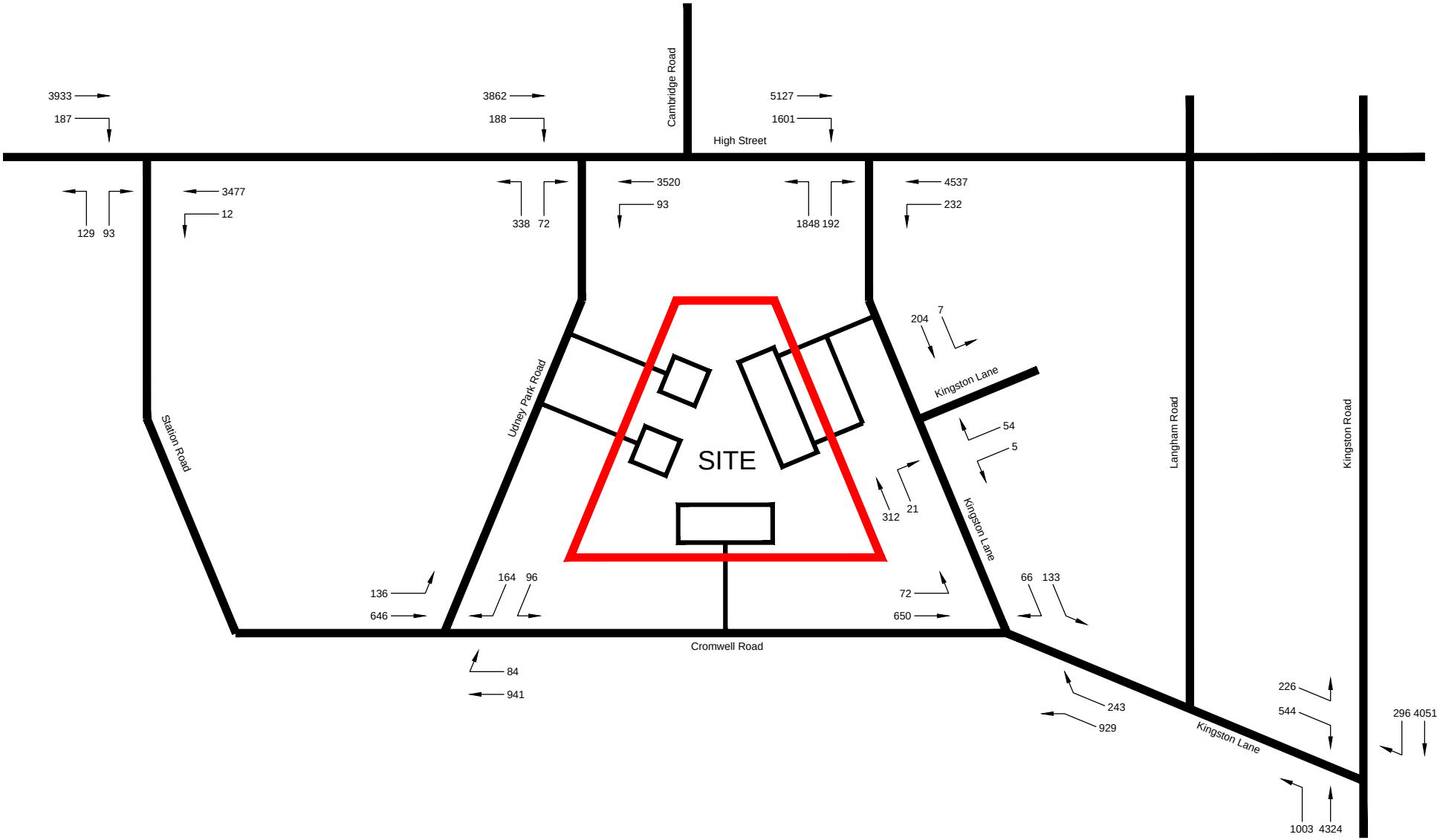
Cromwell Road, Teddington
Base Line Traffic Data
PM Peak



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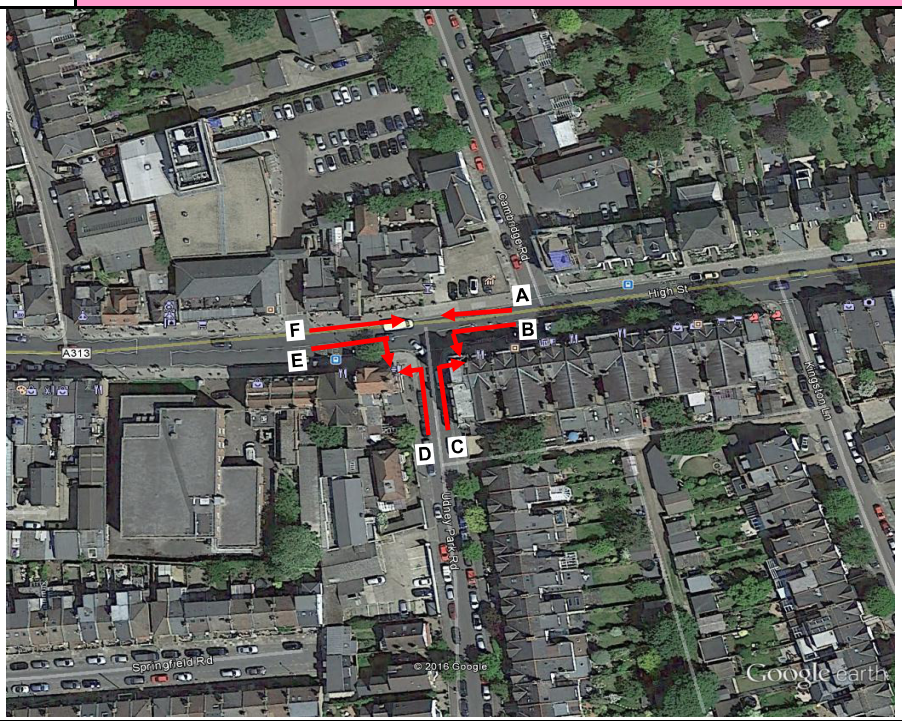
Cromwell Road, Teddington
Base Line Traffic Data
DAILY

APPENDIX 6

CLIENT: BELAMY ROBERTS		**REFERENCE NUMBER:** 16021
PROJECT MANAGER: RICHARD CUMBERWORTH		**DATE:** THUR 14TH JUNE 16
PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNTS SITE 1 - HIGH STREET		



Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNTS - SITE 1

	MOVEMENT A							MOVEMENT B						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	35	5	1	0	3	0	0	6	1	0	0	0	0	1
07:15 : 07:30	41	5	3	0	5	1	0	5	2	0	0	1	0	0
07:30 : 07:45	45	6	0	0	4	0	0	6	2	0	0	0	0	0
07:45 : 08:00	49	5	2	0	5	1	0	5	1	0	0	0	0	1
TOTAL	170	21	6	0	17	2	0	22	6	0	0	1	0	2
08:00 : 08:15	48	8	3	0	5	0	0	4	2	0	0	0	0	0
08:15 : 08:30	60	4	1	0	3	0	7	2	0	0	0	0	0	0
08:30 : 08:45	50	6	2	0	6	0	15	9	1	0	0	0	0	0
08:45 : 09:00	75	8	2	0	4	3	12	3	0	0	0	0	0	0
TOTAL	233	26	8	0	18	3	34	18	3	0	0	0	0	0
09:00 : 09:15	68	3	2	0	3	0	13	0	0	0	0	0	0	0
09:15 : 09:30	52	6	3	0	3	1	6	1	0	0	0	0	0	0
09:30 : 09:45	48	9	0	0	0	0	0	4	0	0	0	0	1	0
09:45 : 10:00	47	7	0	0	0	0	0	5	1	0	0	0	0	0
TOTAL	215	25	5	0	6	1	19	10	1	0	0	0	1	0
10:00 : 10:15	38	11	0	0	0	0	0	2	0	0	0	0	0	0
10:15 : 10:30	40	7	0	0	0	0	0	4	0	0	0	0	0	1
10:30 : 10:45	51	9	0	0	0	0	0	1	1	0	0	0	1	0
10:45 : 11:00	42	8	0	0	0	0	0	3	0	0	0	0	0	0
TOTAL	171	35	0	0	0	0	0	10	1	0	0	0	1	1
11:00 : 11:15	45	12	0	0	0	0	0	2	0	0	0	0	0	0
11:15 : 11:30	51	10	0	0	0	0	0	4	0	0	0	0	0	1
11:30 : 11:45	47	15	0	0	0	0	0	3	2	0	0	0	0	0
11:45 : 12:00	58	9	0	0	0	0	0	2	0	0	0	0	0	0
TOTAL	201	46	0	0	0	0	0	11	2	0	0	0	0	1
12:00 : 12:15	50	7	0	0	0	0	0	3	1	0	0	0	0	0
12:15 : 12:30	49	8	0	0	0	0	0	2	1	0	0	0	0	0
12:30 : 12:45	51	9	2	0	0	0	1	1	1	0	0	0	0	0
12:45 : 13:00	58	11	1	0	4	0	2	5	0	0	0	0	0	0
TOTAL	208	35	3	0	4	0	3	11	3	0	0	0	0	0
13:00 : 13:15	54	9	2	0	4	1	2	1	0	0	0	0	0	0
13:15 : 13:30	60	8	2	0	7	2	4	4	0	0	0	0	0	0
13:30 : 13:45	54	10	3	0	4	0	1	1	0	0	0	0	0	0
13:45 : 14:00	50	7	0	1	5	1	7	4	0	0	0	0	0	1
TOTAL	218	34	7	1	20	4	14	10	0	0	0	0	0	1
14:00 : 14:15	78	8	0	0	5	0	3	1	1	0	0	0	0	1
14:15 : 14:30	40	7	0	1	5	0	1	1	0	0	0	0	0	0
14:30 : 14:45	73	11	1	0	3	0	1	0	0	0	0	0	0	0
14:45 : 15:00	48	13	1	0	4	1	2	2	0	0	0	0	0	0
TOTAL	239	39	2	1	17	1	7	4	1	0	0	0	0	1
15:00 : 15:15	52	8	1	0	8	1	1	3	0	0	0	0	0	0
15:15 : 15:30	56	12	0	0	4	1	6	5	1	0	0	0	0	2
15:30 : 15:45	98	9	3	0	6	0	3	3	0	0	0	0	0	0
15:45 : 16:00	73	5	5	0	5	1	8	4	0	0	0	0	0	0
TOTAL	279	34	9	0	23	3	18	15	1	0	0	0	0	2
16:00 : 16:15	63	11	0	0	6	1	1	1	1	0	0	0	0	2
16:15 : 16:30	60	7	0	0	1	0	5	1	0	0	0	0	0	0
16:30 : 16:45	71	6	0	0	4	0	2	1	2	0	0	0	0	1
16:45 : 17:00	77	8	0	0	6	1	7	0	0	0	0	0	1	0
TOTAL	271	32	0	0	17	2	15	3	3	0	0	0	1	3
17:00 : 17:15	65	8	0	0	2	2	4	2	0	0	0	0	0	0
17:15 : 17:30	53	4	0	0	7	1	9	3	0	0	0	0	0	0
17:30 : 17:45	62	9	0	0	3	1	5	1	0	0	0	0	1	1
17:45 : 18:00	75	0	1	0	5	2	4	3	0	0	0	0	1	0
TOTAL	255	21	1	0	17	6	22	9	0	0	0	0	2	1
18:00 : 18:15	66	7	1	0	5	2	13	1	1	0	0	0	0	0
18:15 : 18:30	60	2	0	0	4	0	8	1	0	0	0	0	0	0
18:30 : 18:45	67	1	0	0	5	2	8	1	0	0	0	0	0	0
18:45 : 19:00	64	6	0	0	5	3	4	1	0	0	0	0	0	0
TOTAL	257	16	1	0	19	7	33	4	1	0	0	0	0	0
DAILY TOTAL	**2717**	**364**	**42**	**2**	**158**	**29**	**165**	**127**	**22**	**0**	**0**	**1**	**5**	**12**
GRAND TOTAL	**3477**							**167**						

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNTS - SITE 1

	MOVEMENT C							MOVEMENT D						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	1	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 : 07:30	0	0	0	0	0	0	0	2	0	0	0	0	0	0
07:30 : 07:45	2	1	0	0	0	0	0	0	1	0	0	0	0	2
07:45 : 08:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL	4	1	0	0	0	0	0	4	1	0	0	0	0	2
08:00 : 08:15	3	0	0	0	0	0	0	1	1	0	0	0	0	1
08:15 : 08:30	2	0	0	0	0	0	1	4	0	0	0	0	0	0
08:30 : 08:45	1	1	0	0	0	0	1	2	0	0	0	0	0	0
08:45 : 09:00	2	0	0	0	0	0	3	0	0	0	0	0	0	1
TOTAL	8	1	0	0	0	0	5	7	1	0	0	0	0	2
09:00 : 09:15	2	0	0	0	0	0	0	0	1	0	0	0	0	1
09:15 : 09:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 : 09:45	3	0	0	0	0	0	2	1	0	0	0	0	0	0
09:45 : 10:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	7	0	0	0	0	0	2	1	1	0	0	0	0	1
10:00 : 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10:15 : 10:30	1	1	0	0	0	0	0	2	0	0	0	0	0	0
10:30 : 10:45	2	0	0	0	0	0	1	0	1	0	0	0	0	0
10:45 : 11:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL	4	1	0	0	0	0	1	3	1	0	0	0	0	1
11:00 : 11:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 : 11:30	2	0	0	0	0	0	1	1	1	0	0	0	0	0
11:30 : 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 : 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	0	0	0	0	0	1	1	1	0	0	0	0	1
12:00 : 12:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 : 12:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12:30 : 12:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12:45 : 13:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0
TOTAL	1	1	0	0	0	0	0	2	1	0	0	0	0	0
13:00 : 13:15	3	0	0	0	0	0	0	2	0	0	0	0	0	0
13:15 : 13:30	0	0	0	0	0	0	1	4	1	0	0	0	0	0
13:30 : 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 : 14:00	2	0	0	0	0	0	0	3	0	0	0	0	0	1
TOTAL	5	0	0	0	0	0	1	9	1	0	0	0	0	1
14:00 : 14:15	1	2	0	0	0	0	0	3	1	0	0	0	0	0
14:15 : 14:30	0	0	0	0	0	0	0	2	0	0	0	0	0	1
14:30 : 14:45	2	0	0	0	0	0	0	6	1	0	0	0	0	0
14:45 : 15:00	2	0	0	0	0	0	0	1	2	0	0	0	0	0
TOTAL	5	2	0	0	0	0	0	12	4	0	0	0	0	1
15:00 : 15:15	1	0	0	0	0	0	0	3	0	0	0	0	0	0
15:15 : 15:30	3	3	0	0	0	0	1	2	1	0	0	0	0	0
15:30 : 15:45	5	0	0	0	0	0	0	6	0	0	0	0	0	0
15:45 : 16:00	4	0	0	0	0	0	0	3	0	0	0	0	0	2
TOTAL	13	3	0	0	0	0	1	14	1	0	0	0	0	2
16:00 : 16:15	0	0	0	0	0	0	0	2	0	0	0	0	0	0
16:15 : 16:30	1	0	0	0	0	0	0	6	1	0	0	0	0	0
16:30 : 16:45	0	0	0	0	0	0	1	1	0	0	0	0	0	0
16:45 : 17:00	4	0	0	0	0	0	0	2	0	0	0	0	0	0
TOTAL	5	0	0	0	0	0	1	11	1	0	0	0	0	0
17:00 : 17:15	2	0	0	0	0	0	0	3	1	0	0	0	0	0
17:15 : 17:30	4	0	0	0	0	0	0	4	0	0	0	0	0	0
17:30 : 17:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0
17:45 : 18:00	0	0	0	0	0	0	0	9	0	0	0	0	2	1
TOTAL	6	0	0	0	0	0	0	18	1	0	0	0	2	1
18:00 : 18:15	2	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15 : 18:30	5	0	0	0	0	0	0	5	2	0	0	0	0	0
18:30 : 18:45	2	1	0	0	0	0	0	11	0	0	0	0	0	0
18:45 : 19:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL	10	1	0	0	0	0	0	17	2	0	0	0	0	0
DAILY TOTAL	**71**	**10**	**0**	**0**	**0**	**0**	**12**	**99**	**16**	**0**	**0**	**0**	**2**	**12**
GRAND TOTAL	**93**							**129**						

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNTS - SITE 1

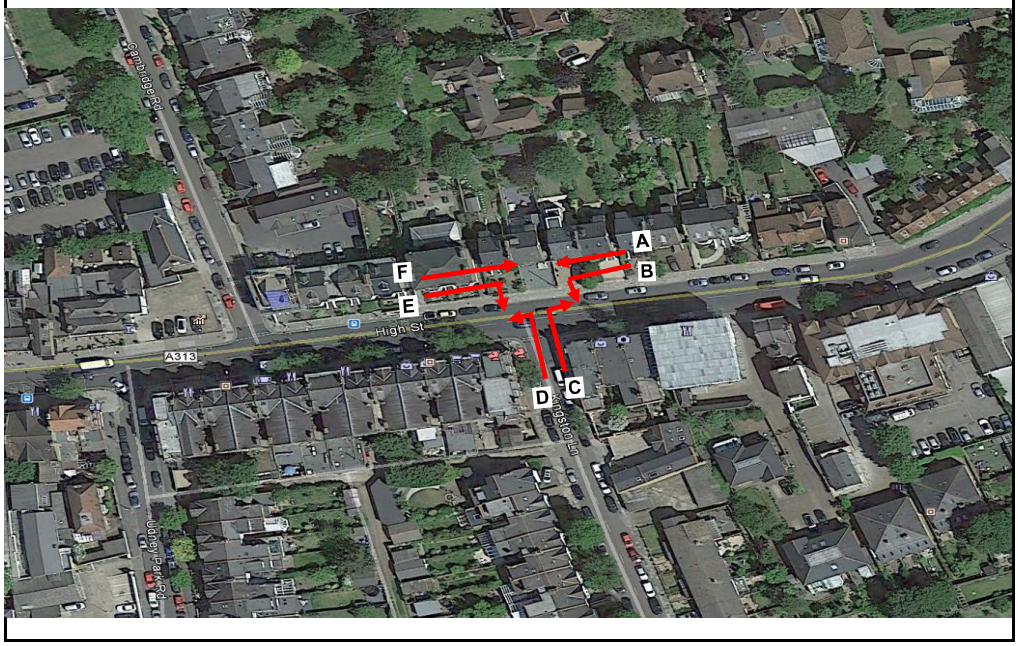
	MOVEMENT E							MOVEMENT F						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	2	0	0	0	0	0	0	40	8	3	0	3	2	5
07:15 : 07:30	0	0	0	0	0	0	0	52	9	2	0	4	3	9
07:30 : 07:45	1	0	0	0	0	1	0	61	11	1	0	3	1	12
07:45 : 08:00	3	1	0	0	0	0	0	42	12	1	0	5	0	18
TOTAL	6	1	0	0	0	1	0	195	40	7	0	15	6	44
08:00 : 08:15	6	0	0	0	0	0	0	61	16	3	0	6	1	8
08:15 : 08:30	9	1	0	0	0	1	1	58	9	1	0	5	2	11
08:30 : 08:45	4	0	0	0	0	0	0	93	11	1	0	3	0	7
08:45 : 09:00	5	0	0	0	0	0	0	62	9	0	0	5	0	5
TOTAL	24	1	0	0	0	1	1	274	45	5	0	19	3	31
09:00 : 09:15	0	1	0	0	0	0	0	58	19	5	0	6	1	3
09:15 : 09:30	3	0	0	0	0	0	1	44	10	2	0	7	0	3
09:30 : 09:45	4	1	0	0	0	0	0	53	7	1	0	5	0	5
09:45 : 10:00	2	0	0	0	0	0	0	49	15	3	0	6	0	6
TOTAL	9	2	0	0	0	0	1	204	51	11	0	24	1	17
10:00 : 10:15	1	0	0	0	0	0	0	48	5	2	0	6	0	2
10:15 : 10:30	4	1	0	0	0	1	0	55	9	1	0	5	2	3
10:30 : 10:45	1	0	0	0	0	0	2	63	9	0	0	5	1	5
10:45 : 11:00	2	0	0	0	0	0	0	50	4	0	0	5	0	4
TOTAL	8	1	0	0	0	1	2	216	27	3	0	21	3	14
11:00 : 11:15	1	0	0	0	0	0	1	47	5	1	0	4	0	1
11:15 : 11:30	1	1	0	0	0	0	0	49	9	1	0	4	0	3
11:30 : 11:45	4	0	0	0	0	0	0	52	5	2	0	4	1	0
11:45 : 12:00	2	0	0	0	0	0	1	56	6	3	0	5	1	2
TOTAL	8	1	0	0	0	0	2	204	25	7	0	17	2	6
12:00 : 12:15	3	0	0	0	0	0	0	49	2	2	0	7	0	0
12:15 : 12:30	1	1	0	0	0	0	0	61	3	1	0	6	2	3
12:30 : 12:45	1	1	0	0	0	0	0	57	2	1	0	2	0	1
12:45 : 13:00	4	0	0	0	0	0	0	59	5	1	0	5	1	1
TOTAL	9	2	0	0	0	0	0	226	12	5	0	20	3	5
13:00 : 13:15	1	0	0	0	0	0	0	79	8	1	0	5	0	2
13:15 : 13:30	4	0	0	0	0	0	0	47	6	0	0	6	0	2
13:30 : 13:45	1	0	0	0	0	0	0	57	12	0	0	4	1	2
13:45 : 14:00	3	2	0	0	0	0	0	62	8	0	0	4	1	0
TOTAL	9	2	0	0	0	0	0	245	34	1	0	19	2	6
14:00 : 14:15	4	1	0	0	0	0	0	63	12	0	1	5	0	1
14:15 : 14:30	0	0	0	0	0	0	0	47	7	0	0	6	0	2
14:30 : 14:45	2	0	0	0	0	0	0	57	9	2	0	3	2	3
14:45 : 15:00	4	1	0	0	0	0	0	76	11	1	0	5	3	1
TOTAL	10	2	0	0	0	0	0	243	39	3	1	19	5	7
15:00 : 15:15	3	0	0	0	0	0	1	58	9	2	0	4	1	5
15:15 : 15:30	1	1	0	0	0	0	1	66	4	1	0	4	0	5
15:30 : 15:45	4	0	0	0	0	0	0	86	7	0	0	4	1	2
15:45 : 16:00	2	0	0	0	0	0	0	66	7	0	0	4	0	3
TOTAL	10	1	0	0	0	0	2	276	27	3	0	16	2	15
16:00 : 16:15	3	1	0	0	0	0	1	58	7	0	0	5	0	9
16:15 : 16:30	4	0	0	0	0	0	0	61	5	0	0	3	0	6
16:30 : 16:45	2	0	0	0	0	0	1	75	5	1	0	6	0	8
16:45 : 17:00	2	1	0	0	0	0	0	63	5	0	0	6	0	6
TOTAL	11	2	0	0	0	0	2	257	22	1	0	20	0	29
17:00 : 17:15	9	1	0	0	0	0	1	81	8	0	0	6	1	4
17:15 : 17:30	7	1	0	0	0	0	0	78	3	0	1	3	3	8
17:30 : 17:45	3	1	0	0	0	0	0	80	1	0	0	4	3	9
17:45 : 18:00	4	0	0	0	0	0	0	100	2	0	0	4	2	19
TOTAL	23	3	0	0	0	0	1	339	14	0	1	17	9	40
18:00 : 18:15	8	1	0	0	0	0	1	89	4	0	0	4	1	11
18:15 : 18:30	7	1	0	0	0	0	0	82	5	0	0	6	2	10
18:30 : 18:45	2	0	0	0	0	0	1	85	7	0	1	5	1	8
18:45 : 19:00	5	1	0	0	0	0	1	74	4	0	0	4	2	8
TOTAL	22	3	0	0	0	0	3	330	20	0	1	19	6	37
DAILY TOTAL	**149**	**21**	**0**	**0**	**0**	**3**	**14**	**3009**	**356**	**46**	**3**	**226**	**42**	**251**
GRAND TOTAL	**187**							**3933**						

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REFERENCE NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNT - SITE 2



16021 - RICHMOND MCC - SITE 2 SITE PLAN

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNT - SITE 2

	MOVEMENT A							MOVEMENT B						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	40	5	1	0	3	0	12	0	1	0	0	0	0	0
07:15 : 07:30	44	8	3	0	6	1	5	1	0	0	0	0	0	0
07:30 : 07:45	54	8	0	0	5	1	10	0	0	0	0	0	0	0
07:45 : 08:00	52	5	3	0	5	0	10	1	1	0	0	0	0	0
TOTAL	190	26	7	0	19	2	37	2	2	0	0	0	0	0
08:00 : 08:15	51	10	3	0	4	0	9	0	0	0	0	0	0	0
08:15 : 08:30	62	7	1	0	4	0	6	1	0	0	0	0	0	1
08:30 : 08:45	41	7	3	0	6	0	14	2	1	0	0	0	0	2
08:45 : 09:00	66	6	1	0	4	2	12	1	0	0	0	0	0	1
TOTAL	220	30	8	0	18	2	41	4	1	0	0	0	0	4
09:00 : 09:15	63	5	2	0	3	0	12	2	0	0	0	0	0	0
09:15 : 09:30	54	7	3	0	5	3	6	1	1	0	0	0	0	0
09:30 : 09:45	48	4	2	0	5	2	2	2	0	0	0	0	0	0
09:45 : 10:00	59	10	0	0	6	0	2	4	0	0	0	0	0	0
TOTAL	224	26	7	0	19	5	22	9	1	0	0	0	0	0
10:00 : 10:15	38	12	4	0	4	1	3	2	0	0	0	0	0	1
10:15 : 10:30	48	7	4	0	5	0	4	2	1	0	0	0	0	0
10:30 : 10:45	46	10	2	1	6	0	3	2	0	0	0	0	0	0
10:45 : 11:00	46	8	2	0	8	0	0	4	2	0	1	0	0	0
TOTAL	178	37	12	1	23	1	10	10	3	0	1	0	0	1
11:00 : 11:15	51	16	0	0	4	0	3	2	0	0	0	0	0	0
11:15 : 11:30	55	7	1	0	5	0	1	0	1	0	0	0	0	0
11:30 : 11:45	50	16	1	0	3	0	1	1	0	0	0	0	0	1
11:45 : 12:00	60	9	0	0	6	0	2	0	2	0	0	0	0	0
TOTAL	216	48	2	0	18	0	7	3	3	0	0	0	0	1
12:00 : 12:15	52	7	2	0	3	0	2	1	0	0	0	0	0	0
12:15 : 12:30	55	9	2	0	3	0	4	0	2	0	0	0	0	1
12:30 : 12:45	49	10	1	0	6	0	4	0	0	0	0	0	0	0
12:45 : 13:00	51	9	1	0	4	0	3	1	0	0	0	0	0	0
TOTAL	207	35	6	0	16	0	13	2	2	0	0	0	0	1
13:00 : 13:15	42	8	3	0	4	0	0	2	0	0	0	0	0	0
13:15 : 13:30	59	7	2	0	7	2	2	1	1	0	0	0	0	0
13:30 : 13:45	49	11	1	0	4	0	2	4	1	0	0	0	0	0
13:45 : 14:00	46	8	0	0	5	1	7	2	0	0	0	0	0	0
TOTAL	196	34	6	0	20	3	11	9	2	0	0	0	0	0
14:00 : 14:15	64	7	0	0	5	0	4	0	0	0	0	0	0	0
14:15 : 14:30	37	7	0	1	5	0	1	0	0	0	0	0	0	0
14:30 : 14:45	71	5	2	0	3	0	2	0	0	0	0	0	0	0
14:45 : 15:00	42	13	1	0	4	1	2	1	1	0	0	0	0	0
TOTAL	214	32	3	1	17	1	9	1	1	0	0	0	0	0
15:00 : 15:15	55	7	2	0	8	1	1	1	0	0	0	0	0	0
15:15 : 15:30	56	9	0	0	4	1	8	2	0	0	0	0	0	1
15:30 : 15:45	80	8	2	0	6	0	4	0	0	0	0	0	0	0
15:45 : 16:00	64	4	0	0	5	1	7	1	0	0	0	0	0	0
TOTAL	255	28	4	0	23	3	20	4	0	0	0	0	0	1
16:00 : 16:15	52	8	0	0	5	1	4	1	0	0	0	0	0	2
16:15 : 16:30	55	5	0	0	2	0	2	0	0	0	0	0	0	0
16:30 : 16:45	70	9	0	0	4	0	4	3	1	0	0	0	0	0
16:45 : 17:00	63	9	0	0	7	2	5	0	0	0	0	0	0	0
TOTAL	240	31	0	0	18	3	15	4	1	0	0	0	0	2
17:00 : 17:15	66	7	0	0	3	1	3	0	0	0	0	0	0	0
17:15 : 17:30	54	5	0	0	5	1	9	2	1	0	0	0	0	0
17:30 : 17:45	49	7	0	0	5	2	8	3	0	0	0	0	0	1
17:45 : 18:00	62	0	1	0	3	3	11	2	0	0	0	0	0	0
TOTAL	231	19	1	0	16	7	31	7	1	0	0	0	0	1
18:00 : 18:15	56	10	1	0	6	2	11	2	0	0	0	0	0	0
18:15 : 18:30	51	2	0	0	4	0	10	2	0	0	0	0	0	0
18:30 : 18:45	59	1	0	0	4	1	7	3	0	0	0	0	0	0
18:45 : 19:00	50	3	0	0	5	2	10	2	0	0	0	0	0	0
TOTAL	216	16	1	0	19	5	38	9	0	0	0	0	0	0
DAILY TOTAL	**2587**	**362**	**57**	**2**	**226**	**32**	**254**	**64**	**17**	**0**	**1**	**0**	**0**	**11**
GRAND TOTAL	**3520**							**93**						

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNT - SITE 2

	MOVEMENT C							MOVEMENT D						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	2	0	0	0	0	0	0	2	1	0	0	0	0	0
07:15 : 07:30	0	0	0	0	0	0	1	7	0	0	0	0	0	0
07:30 : 07:45	1	0	0	0	0	0	0	6	1	0	0	0	0	0
07:45 : 08:00	0	0	0	0	0	0	2	6	0	0	0	0	1	0
TOTAL	3	0	0	0	0	0	3	21	2	0	0	0	1	0
08:00 : 08:15	0	0	0	0	0	0	0	2	3	0	0	0	0	1
08:15 : 08:30	0	0	0	0	0	0	0	9	0	0	0	0	0	1
08:30 : 08:45	0	0	0	0	0	0	0	7	2	0	0	0	0	1
08:45 : 09:00	3	0	0	0	0	0	0	12	1	0	0	0	1	0
TOTAL	3	0	0	0	0	0	0	30	6	0	0	0	1	3
09:00 : 09:15	1	0	0	0	0	0	0	11	0	0	0	0	0	0
09:15 : 09:30	1	0	0	0	0	0	0	2	1	0	0	0	0	0
09:30 : 09:45	0	0	0	0	0	0	0	6	5	0	0	0	0	0
09:45 : 10:00	0	1	0	0	0	0	0	2	0	0	0	0	0	1
TOTAL	2	1	0	0	0	0	0	21	6	0	0	0	0	1
10:00 : 10:15	1	1	0	0	0	0	0	6	1	0	0	0	0	0
10:15 : 10:30	1	1	0	0	0	0	1	2	0	0	0	0	0	0
10:30 : 10:45	1	0	0	0	0	0	0	6	2	0	0	0	0	0
10:45 : 11:00	0	0	0	0	0	0	0	2	0	0	0	0	0	1
TOTAL	3	2	0	0	0	0	1	16	3	0	0	0	0	1
11:00 : 11:15	0	0	0	0	0	0	0	3	0	0	0	0	0	0
11:15 : 11:30	0	0	0	0	0	0	0	3	0	0	0	0	0	1
11:30 : 11:45	0	2	0	0	0	0	0	3	0	0	0	0	0	0
11:45 : 12:00	0	3	0	0	0	0	0	4	1	0	0	0	0	0
TOTAL	0	5	0	0	0	0	0	13	1	0	0	0	0	1
12:00 : 12:15	1	1	0	0	0	0	0	9	0	0	0	0	0	0
12:15 : 12:30	0	0	0	0	0	0	1	3	3	0	0	0	0	0
12:30 : 12:45	2	1	0	0	0	0	0	6	2	0	0	0	0	1
12:45 : 13:00	0	1	0	0	0	0	0	1	1	0	0	0	0	0
TOTAL	3	3	0	0	0	0	1	19	6	0	0	0	0	1
13:00 : 13:15	3	0	0	0	0	0	0	6	2	0	0	0	0	1
13:15 : 13:30	0	0	0	0	0	0	0	4	0	0	0	0	0	1
13:30 : 13:45	1	0	0	0	0	0	0	5	1	0	0	0	0	0
13:45 : 14:00	1	0	0	0	0	0	0	6	0	0	0	0	0	0
TOTAL	5	0	0	0	0	0	0	21	3	0	0	0	0	2
14:00 : 14:15	1	0	0	0	0	0	0	7	0	0	0	0	0	0
14:15 : 14:30	0	0	0	0	0	0	0	4	1	0	0	0	0	0
14:30 : 14:45	0	0	0	0	0	0	0	4	2	0	0	0	0	0
14:45 : 15:00	1	1	1	0	0	0	0	3	0	0	0	0	0	0
TOTAL	2	1	1	0	0	0	0	18	3	0	0	0	0	0
15:00 : 15:15	1	1	0	0	0	0	0	5	0	0	0	0	0	0
15:15 : 15:30	3	0	0	0	0	0	1	7	4	0	0	0	0	1
15:30 : 15:45	5	1	0	0	0	0	1	23	1	1	0	0	0	0
15:45 : 16:00	1	0	0	0	0	0	0	8	1	0	0	0	0	0
TOTAL	10	2	0	0	0	0	2	43	6	1	0	0	0	1
16:00 : 16:15	0	0	0	0	0	0	0	5	2	0	0	0	0	0
16:15 : 16:30	1	0	0	0	0	0	0	4	1	0	0	0	0	1
16:30 : 16:45	1	0	0	0	0	0	0	4	2	0	0	0	0	1
16:45 : 17:00	0	0	0	0	0	0	0	4	0	0	0	0	0	1
TOTAL	2	0	0	0	0	0	0	17	5	0	0	0	0	3
17:00 : 17:15	2	0	0	0	0	0	0	5	0	0	0	0	0	1
17:15 : 17:30	0	0	0	0	0	0	0	3	0	0	0	0	0	1
17:30 : 17:45	3	1	0	0	0	0	1	12	1	0	0	0	0	0
17:45 : 18:00	1	1	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL	6	2	0	0	0	0	1	24	1	0	0	0	0	2
18:00 : 18:15	5	0	0	0	0	0	0	11	0	0	0	0	0	2
18:15 : 18:30	2	0	0	0	0	0	0	4	0	0	0	0	0	0
18:30 : 18:45	0	0	0	0	0	0	0	7	1	0	0	0	0	0
18:45 : 19:00	1	0	0	0	0	0	0	9	0	0	0	0	1	0
TOTAL	8	0	0	0	0	0	0	31	1	0	0	0	1	2
DAILY TOTAL	**47**	**16**	**1**	**0**	**0**	**0**	**8**	**274**	**43**	**1**	**0**	**0**	**3**	**17**
GRAND TOTAL	**72**							**338**						

Quality Traffic Surveys

CLIENT: BELLAMY ROBERTS **REF NUMBER:** 16021

PROJECT MANAGER: RICHARD CUMBERWORTH **DATE:** TUE 14TH JUNE 16

PROJECT DESCRIPTION: RICHMOND - MANUAL CLASSIFIED COUNT - SITE 2

	MOVEMENT E							MOVEMENT F						
	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE	CAR	LGV	OGV 1	OGV 2	PSV	M/C	CYCLE
07:00 : 07:15	1	2	0	0	0	0	0	31	6	3	0	4	2	0
07:15 : 07:30	3	0	0	0	0	0	0	54	12	3	0	4	1	10
07:30 : 07:45	4	0	0	0	0	0	0	61	10	1	0	3	2	11
07:45 : 08:00	1	1	0	0	0	0	0	49	14	1	0	5	0	16
TOTAL	9	3	0	0	0	0	0	195	42	8	0	16	5	11
08:00 : 08:15	5	3	0	0	0	0	1	64	15	4	0	6	0	6
08:15 : 08:30	3	1	0	0	0	0	0	70	8	1	0	6	2	13
08:30 : 08:45	9	1	0	0	0	0	0	87	11	0	0	3	0	10
08:45 : 09:00	5	0	0	0	0	0	0	57	9	0	0	5	0	8
TOTAL	22	5	0	0	0	0	1	278	43	5	0	20	2	37
09:00 : 09:15	3	1	0	0	0	0	1	58	17	4	0	6	1	4
09:15 : 09:30	2	2	0	0	0	0	0	53	10	3	0	7	1	6
09:30 : 09:45	5	0	0	0	0	0	0	56	9	2	0	5	0	4
09:45 : 10:00	1	2	0	0	0	0	0	58	17	4	0	6	1	6
TOTAL	11	5	0	0	0	0	1	225	53	13	0	24	3	20
10:00 : 10:15	2	0	0	0	0	0	0	52	6	2	0	6	2	3
10:15 : 10:30	1	0	0	0	0	0	1	52	9	1	0	5	2	4
10:30 : 10:45	6	0	0	0	0	0	0	58	12	0	0	5	1	4
10:45 : 11:00	1	0	0	0	0	0	0	50	6	0	0	5	0	3
TOTAL	10	0	0	0	0	0	1	212	33	3	0	21	5	14
11:00 : 11:15	1	1	0	0	0	0	0	50	6	1	0	4	0	1
11:15 : 11:30	3	0	0	0	0	0	0	52	11	1	0	4	0	3
11:30 : 11:45	1	0	0	0	0	0	0	52	8	2	0	4	1	1
11:45 : 12:00	3	0	0	0	0	0	0	55	18	4	0	5	1	2
TOTAL	8	1	0	0	0	0	0	209	43	8	0	17	2	7
12:00 : 12:15	6	1	0	0	0	0	0	47	10	1	0	6	0	0
12:15 : 12:30	2	0	0	0	0	0	0	51	6	1	0	7	1	4
12:30 : 12:45	5	0	0	0	0	0	0	76	11	2	0	3	0	3
12:45 : 13:00	1	1	0	0	0	0	1	58	4	1	0	5	1	1
TOTAL	14	2	0	0	0	0	1	232	31	5	0	21	2	8
13:00 : 13:15	5	1	0	0	0	0	0	66	11	1	0	5	0	2
13:15 : 13:30	0	0	0	0	0	0	0	40	6	0	0	6	0	3
13:30 : 13:45	1	0	0	0	0	0	1	53	9	0	0	4	1	2
13:45 : 14:00	4	0	0	0	0	0	0	52	12	1	0	5	0	1
TOTAL	10	1	0	0	0	0	1	211	38	2	0	20	1	8
14:00 : 14:15	2	1	0	0	0	0	0	59	13	0	0	5	0	1
14:15 : 14:30	0	1	0	0	0	0	0	45	5	0	0	6	0	1
14:30 : 14:45	6	1	0	0	0	0	1	56	7	2	0	3	1	5
14:45 : 15:00	3	0	1	0	0	0	2	71	12	1	0	6	1	1
TOTAL	11	3	1	0	0	0	3	231	37	3	0	20	2	8
15:00 : 15:15	5	1	0	0	0	0	0	65	7	2	0	2	0	4
15:15 : 15:30	1	1	0	0	0	0	0	67	7	1	0	4	0	4
15:30 : 15:45	3	0	0	0	0	0	0	73	6	0	0	4	0	4
15:45 : 16:00	3	0	0	0	0	0	0	66	8	0	0	4	0	3
TOTAL	12	2	0	0	0	0	0	271	28	3	0	14	0	15
16:00 : 16:15	2	0	0	0	0	0	0	52	7	0	0	5	0	8
16:15 : 16:30	5	1	0	0	0	0	0	56	6	0	0	3	0	7
16:30 : 16:45	1	2	0	0	1	0	0	67	5	0	0	5	0	8
16:45 : 17:00	3	0	0	0	0	0	2	61	4	0	0	6	0	6
TOTAL	11	3	0	0	1	0	2	236	22	0	0	19	0	29
17:00 : 17:15	3	0	0	0	0	0	0	80	7	0	0	6	0	6
17:15 : 17:30	2	0	0	0	0	0	0	78	3	1	0	3	3	9
17:30 : 17:45	5	0	0	0	0	0	0	69	2	0	0	4	1	9
17:45 : 18:00	4	0	0	0	0	0	1	88	1	0	0	4	3	16
TOTAL	14	0	0	0	0	0	1	315	13	1	0	17	7	40
18:00 : 18:15	2	0	0	0	0	0	0	81	4	0	0	4	1	7
18:15 : 18:30	4	1	0	0	0	0	0	75	3	0	0	6	0	11
18:30 : 18:45	6	1	0	0	0	0	0	72	5	0	1	5	0	8
18:45 : 19:00	3	1	0	0	0	0	0	78	4	0	0	4	2	7
TOTAL	15	3	0	0	0	0	0	306	16	0	1	19	3	33
DAILY TOTAL	**147**	**28**	**1**	**0**	**1**	**0**	**11**	**2921**	**399**	**51**	**1**	**228**	**32**	**230**
GRAND TOTAL	**188**							**3862**						