REPORT

Richmond Royal Hospital

Transport Assessment

Client: UKI Richmond Ltd

Reference: PB8054TPRP1811271403
Revision: 0.1/Final
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Disclaimer

Royal HaskoningDHV

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1 Introduction

1.1 Preface

1.1.1 This Transport Assessment (TA) has been prepared by Royal HaskoningDHV (RHDHV), on behalf of UKI Richmond Ltd, to establish the travel implications associated with the proposed redevelopment of the Richmond Royal Hospital (the "Site").

1.1.2 The Site is located on Kew Foot Road, adjacent to the Richmond Athletic Ground which is home to Richmond Rugby Club (RFC). The Site is currently used as a medical centre for outpatient services of which 1,015sq.m is currently used. The site is located 200 metres (m) north of the A316 Twickenham Road and 110m west of the A307 Kew Road. The Site is bounded predominately by residential housing with some small commercial, community and employment units provided locally.

1.1.3 The site is close to Richmond town centre with many facilities located within a 1 kilometre (km) walk to the south of the Site. A Site location plan is provided as **Insert 1.1**.

Insert 1.1: Site Location

1.1.4 The proposed development will include 68 x residential units (C3 land use) and 500sq.m of community healthcare facilities (D1 land use).

1.2 Scope of Assessment

1.2.1 This TA will provide detailed consideration of the transport implications associated with the development, and will also consider an assessment of the site's accessibility by sustainable modes.

1.2.2 A review of the site's net traffic generation, with consideration of the current hospital traffic attraction, will be undertaken.

1.2.3 This TA is divided into six sections, summarised as follows:

- **Section 2** will provide a summary of the existing Site conditions and the Site's accessibility by non-car modes of travel.
- **Section 3** will consider the local highway network and road safety.
- **Section 4** will summarise the proposed development scheme.
- **Section 5** will quantify the development sites trip generation. This section will outline the likely net change in traffic movements to and from the site as a result of the proposal.
- **Section 6** will provide an overview of the national, regional and local planning policy relevant to the development proposal.
- **Section 7** will provide a summary and conclusion to this document.

2 Existing Conditions

2.1 Preface

2.1.1 This section considers current opportunities to access the Site by sustainable means of travel other than by private car. Travel opportunities on foot, by cycle, bus and train are considered in the context of the Site.

2.2 Walking and Cycling

2.2.1 The Chartered Institute of Highways and Transportation's (CIHT's) publication 'Providing for Journeys on Foot' (2000), states that the average length of a walk journey is 1 kilometre (km). It further recommends a preferred maximum walking distance of 2km for commuting journeys and 1.2 km for other journey destinations.

2.2.2 Furthermore, the Department for Transport's statistical release 'National Travel Survey, England' identifies that "*walking is the most frequent mode used for very short distance trips: 76% of all trips under one mile are walks".*

2.2.3 The development site is situated approximately 600m north of Richmond town centre, which is within the acceptable walking distance suggested by the CIHT. A significant number of retail and local amenity services are located within Richmond town centre.

2.2.4 Pedestrians from the Site can follow Kew Foot Road and St John's Grove to the A316 where there is a surface level signal controlled crossing of the A316. A further signalised pedestrian crossing on the A307 Kew Road is located by Jocelyn Road.

2.2.5 In terms of accessibility the site is located in close proximity to a number of local amenities. **Table 2.1** provides a summary of local amenities located within walk distance from the site.

Table 2.1: Local Amenities

Amenity	Name	Walk Distance
Healthcare	Parkshot Medical Centre	600m
Supermarket	Waitrose	900m
	Whole Foods Market	850m
	Tesco Metro	900m
Restaurants	Restaurant 109	300m
	Treviso	300m
Education	Richmond Adult Community College	550m
	The Falcons Preparatory School for Boys	60m
	Deer Park School	750m
Leisure	Richmond Athletic Ground	100m
	Pools on the Park	550m
	Richmond Cricket Club	350m

2.2.6 An isochrone plan is presented within **Appendix A** which identifies local amenities that are located within one and two kilometres of the Site.

2.2.7 The London Borough of Richmond's Cycling Strategy states that *"The London Borough of Richmond upon Thames has the highest proportion of people cycling in London (7% of journeys)."*

2.2.8 Whilst not formally signed and marked as a cycle route, Kew Foot Road and Jocelyn Road are identified by TfL as quiet routes suitable for family and leisure cycling. The Borough's Cycling Strategy also identifies that these streets will in future form local connections to the London Quietway network. This would mean that the streets would be signed for cyclists, connecting to a network of routes that will extend across London, including routes:

- North, on the A307 towards Kew Bridge;
- East, adjacent to the A316 Lower Richmond Road and Clifford Avenue, towards Chiswick Bridge;
- South, connecting with the Tow Path, Richmond Park and Kingston-upon-Thames; and
- West, adjacent to Twickenham Road towards Richmond Bridge and Twickenham.

2.3 Public Transport

2.3.1 The site is located close to a number of public transport links, including bus stops and Richmond railway station.

Rail

2.3.2 Richmond railway station is located approximately 600m south of the Site and is served by National Rail services operated by South Western Railways, between London Waterloo, Reading, Windsor and Eton, Kingston-upon-Thames, Hounslow and Shepperton.

2.3.3 Richmond is also served by the London Underground District Line Services to Central London via Earls Court and onwards to Upminster in Essex. The frequency of service is between five and six trains per hour during the AM and PM peak hours. Richmond station is located within travel zone 4.

2.3.4 Richmond railway station is also served by Transport for London's Overground network, which provides a service to North London and Stratford via Willesden Junction. The frequency of services is four trains per hour in the AM and PM peak hours.

Buses

2.3.5 There are a number of bus stops located within short walk distance from the site. The closest bus stop to the site is located on the A307 Kew Road located approximately 240m to the east of the Site. Further bus stops are located on the A316 Lower Mortlake Road 350m east of the site.

2.3.6 **Table** 2.2 provides a summary of local bus services.

Table 2.2: Local Bus Services

Service No.	Route	First Bus	Last Bus	Frequency	
				AM Peak	PM Peak
65	Chessington World of Adventures – Chessington North Station – Surbiton Station – Kingston Station – Richmond Station – South Ealing Station - Ealing Broadway Station	24hrs	24hrs	6ph	6ph
190	George Street – Richmond Station – Ravenscourt Park Station – Hammersmith Station – Hammersmith Bus Station – Charing Cross Hospital – West Brompton Station	05:53	00:24	4ph	4ph
371	Manor Road – Richmond Station – American University – Kelvedon Close – Manor Gate Road – Norbiton Church – St James's Road – Kingston Hall Road	05:28	01:03	5ph	5ph
391	George Street – Richmond Station – Kew Gardens Station – Kew Bridge Station – Gunnersbury Station – Chiswick Road – Ravenscourt Park Station – Hammersmith Station – Kensington Olympia – West Kensington Station – Sands End	05:36	00:26	6ph	6ph
419	George Street – Richmond Station – Barnes Bridge Station – Hammersmith Bus Station	06:00	00:13	4ph	4ph
493	St George's University of London – Tooting Broadway Station – Wimbledon Station – Wimbledon Hill Road -Southfields Station – Roehampton University – Richmond Station – Manor Road	06:18	01:57	5ph	5ph
H22	The Bell – Hounslow Bus Station – Whitton Station – Twickenham Green – Orleans Park School – Richmond Station – Manor Road	05:31	00:51	5ph	5ph
H37	Hounslow / Blenheim Centre – Hounslow Bus Station – West Thames College – St Margaret's Station – Richmond Station – Manor Road	05:17	01:07	10ph	10ph
R68	Kew Retail Park – Manor Grove – Richmond Station – York Street – Teddington Memorial Hospital – Oxford Road – Uxbridge Road – Hampton Court Station	05:59	01:09	4ph	4ph
R70	Nurserylands Shopping Centre – Garden Court – Fulmer Close – Cleveland Avenue – Fulwell Station – Twickenham Green – Richmond Station – Manor Road	06:16	01:16	6ph	6ph

2.3.7 An acceptable walk distance to a bus stop is generally considered to be a maximum of 400m. All services referred to in

2.3.8 **Table** 2.2 are accessible within a walk distance of 400m from the Site.

2.4 Public Transport Accessibility Level (PTAL)

2.4.1 TfL's Public Transport Accessibility Level (PTAL) rating has been used to identify the level of accessibility of the site to the local public transport network.

2.4.2 It has been established that the Site is well located for access to bus, London Underground, Overground and rail services, and this is reflected in TfL's PTAL rating for the Site.

2.4.3 TfL's online WebCAT tool has been utilised to calculate the site's PTAL score, which is 6a; this is the second highest score available and it can therefore be considered that access to the site, by public transport, is 'excellent'.

2.4.4 The full PTAL report for the Site is provided as **Appendix B** of this report.

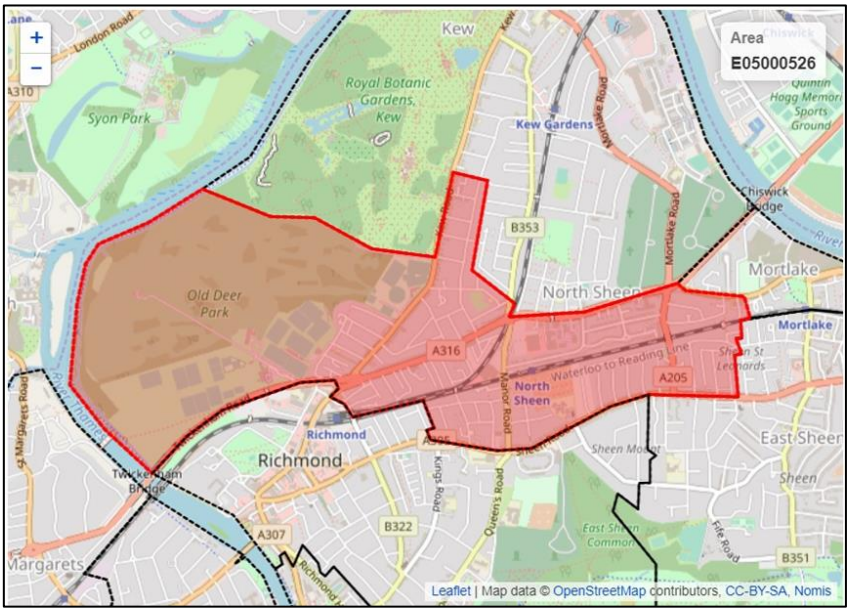
2.5 Car Clubs

2.5.1 The nearest car club vehicles to the Site are located on Old Deer Park Gardens and Selwyn Avenue, approximately 300m from the Site. The Car Club vehicles are operated by Enterprise Car Club and Zipcar, who both maintain a network of vehicles throughout the area.

2.6 2011 Census Data Local Travel Patterns

2.6.1 A review of 2011 Census data for the Method of Travel to Work bas been undertaken. It is based on home location for the North Richmond ward in which the site is situated. The Census data has been analysed to determine the likely modal split for future residents of the development. The extent of North Richmond ward is presented in **Insert 2.1**.

Insert 2.1: North Richmond Ward



2.6.2 The modal split of journeys to work for the North Richmond Ward can be seen in **Table 2.3**.

Table 2.3: Modal Split

Method of Travel to Work	Modal Split
Underground, metro, light rail, tram	18%
Train	27%
Bus, minibus or coach	8%
Taxi	0%
Motorcycle, scooter or moped	2%
Driving a car or van	27%
Passenger in a car or van	1%
Bicycle	7%
On foot	9%
Other method of travel to work	1%

2.6.3 The 2011 Census Data indicates that a very high proportion of trips to work are undertaken by sustainable modes of transport.

2.6.4 Walking, cycling and public transport have a high combined modal split with these sustainable modes representing 69% of all journeys to work. In particular, train and underground usage in the area is high, representing 45% of all journeys to work. Walking and cycling combined accounts for 16% of journeys to work.

2.6.5 The 2011 Census also provides information on car ownership for the Ward of North Richmond. **Table 2.2** below provides car ownership rates for flatted development of all tenures, in the Ward of North Richmond.

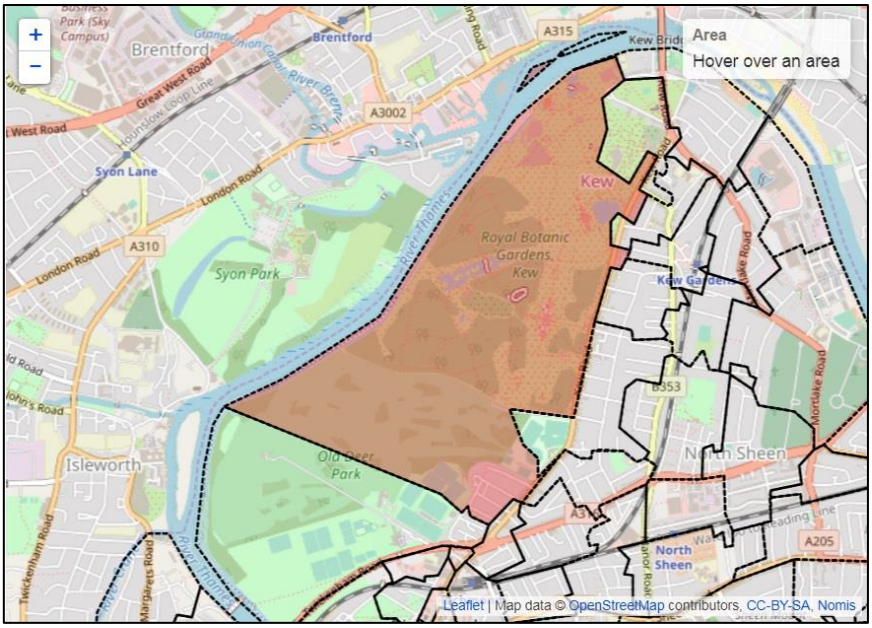
Table 2.4: North Richmond Car Ownership, 2011 Census – Flatted Development, All Tenures

Habitable Rooms	No. Households	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 or more cars or vans in household	Total Cars	Average Cars per household
1 - 3 rooms	1,010	573	384	50	3	493	0.488
4 rooms	721	258	394	65	4	536	0.743
5 rooms	189	53	104	25	7	175	0.926
6 rooms	30	8	18	3	1	27	0.900
7 rooms	14	5	6	3	0	12	0.857
8 or more rooms	26	9	14	1	2	22	0.846

2.6.6 **Table 2.2** identifies that more than 50% of households with one to three habitable rooms in North Richmond are car free. The majority of households within the development Site will have between one and three habitable rooms and as such if the level of car ownership on-site equates to that of the local area, then a high proportion of site residents can be expected to operate, car free.

2.6.7 A review of the 2011 census data for the 'method of travel to work' for the area's Workplace Population has also been undertaken. the Site is located in Workplace Zone E33035755 which is illustrated in **Insert 2.2**.

Insert 2.2: Workplace Zone E33035755



2.6.8 The modal split is presented in **Table 2.5**.

Table 2.5: 2011 Census Modal Split

Method of Travel to work	Census Data	% Split	Census Data	% Split
Work mainly at or from home	67	15.9%	-	-
Underground, metro, light rail or tram	31	7.4%	31	8.8%
Train	84	20.0%	84	23.7%
Bus, minibus or coach	47	11.2%	47	13.3%
Taxi	0	0.0%	0	0.0%
Motorcycle, scooter or moped	1	0.2%	1	0.3%
Driving a car or van	137	32.5%	137	38.7%
Passenger in a car or van	7	1.7%	7	2.0%
Bicycle	27	6.4%	27	7.6%
On foot	19	4.5%	19	5.4%
Other method of travel to work	1	0.2%	1	0.3%
Total	**421**	**100.0%**	**354**	**100.0%**

2.6.9 The 2011 Census Data presented within **Table 2.5** indicates that 39% of journeys to work are undertaken by car.

2.6.10 Sustainable modes of transport represent 59% of the total modal share, with cycling and walking representing 13% combined.

2.6.11 It is noted that the Census data identifies that a high proportion of existing local residents work from home.

2.7 Summary

2.7.1 The Site is well located in relation to the ability to walk and cycle from a significant number of retail opportunities and local amenities.

2.7.2 Pedestrian footways are provided in the area around the site, pedestrian crossings are provided along the A316 and the A307 Kew Road.

2.7.3 Kew Foot Road and Jocelyn Road are identified by the Borough as routes that will connect to the London Quietway network, and this network. An off carriageway cycle route is provided adjacent to the A316.

2.7.4 The Site is located close to a number of public transport services. Richmond railway station is located approximately 600m south of the site.

2.7.5 Richmond railway station is served by National Rail services operated by South Western Railway. Richmond is served by the London Underground District Line service and Transport for London's Overground Network.

2.7.6 The closest bus to the site is located on Kew Foot Road approximately 240m from the site. A total of ten bus services are provided within a 400m walk distance from the site.

2.7.7 The site is located within a PTAL 6a rating area, this is the second highest score available and it can therefore be considered that access to the site, by public transport, is 'excellent'.

2.7.8 The closest Car Club parking space is located approximately 300m from the Site. Car Club spaces are operated locally by Enterprise Car Club and Zipcar, who both maintain a network of vehicles throughout the area.

2.7.9 A review of the 2011 Census 'method of travel to work' data, based on home locations, indicates that sustainable modes of transport have a high modal split with sustainable modes representing 69% of all trips to work.

2.7.10 The 2011 'method of travel to work' census data for the area's workplace population indicates that 39% of journeys to work are currently undertaken by car.

3 Local Highway Network

3.1 Preface

3.1.1 The Site is located on Kew Foot Road, adjacent to the Richmond Athletic Ground which is home to Richmond RFC. Vehicular access to the Site is provided from Evelyn Road. Vehicles exit the Site onto Shaftesbury Road.

3.1.2 The Site is located within Richmond's Controlled Parking Zone (N), which has operational hours of 10:00 to 16:30, Monday to Saturday. Parking is restricted to resident permit holders, business permit holders, visitor bays and shared use bays.

A316 Twickenham Road

3.1.3 The A316 Twickenham Road is located to the south of the Site. Twickenham Road provides access to the Site via St John's Grove, which leads on to form Kew Food Road.

3.1.4 The A316 Twickenham is a four lane two-way single carriageway road. Between its junction with Kew Road and the entrance to 'Pools in the Park' the A316 has a central reservation.

3.1.5 A316 forms part of the Transport for London Road Network (TLRN), which has Red Route controls with no stopping at any time. In the vicinity of the Site the speed limit on the A316 Twickenham Road is restricted to 30 miles per hour (mph).

A307 Kew Road

3.1.6 The A307 Kew Road is located to the east of the Site and runs along the eastern boundary of the Royal Botanic Gardens, eventually joining the South Circular Road (A205) approximately 2.2km north of the Site.

3.1.7 The A307 Kew Road is a two-way single carriageway road.

3.1.8 In the vicinity of its connections to Evelyn Road and Shaftesbury Road the A307 Kew Road accommodates short stay visitor parking and loading bays on its western side. On the eastern side of the road is a bus lane, which is operational between 07:00 and 10:00, and between 16:00 and 19:00. In this area a loading bay is also provided on the eastern side of Kew Road.

Kew Foot Road / St John's Grove

3.1.9 Kew Foot Road is a narrow two-way single carriageway road which runs along the western boundary of the Site. At its southern end, Kew Foot Road becomes St John's Grove and connects with the A316 Twickenham Road at a give-way priority junction (left-in/left-out arrangement). Parking restrictions are in places along Kew Foot Road, with some spaces defined on-street for use by resident permit holders. Elsewhere, parking is controlled by single yellow line waiting restrictions. There are no loading restrictions are in place on Kew Foot Road.

Evelyn Road

3.1.10 Evelyn Road is a narrow one-way road which runs south-eastbound along the northern boundary of the site. The main vehicular access to the site is located off Evelyn Road. On-street parking bays are located along the majority of the road and on both sides of the carriageway. Evelyn Road provides access to the A307 Kew Road.

Shaftesbury Road

3.1.11 Shaftesbury Road is a narrow one-way road which runs north-westbound along the southern boundary of the site. Vehicles from the site exit on to Shaftsbury Road and are required to turn right due to one-way restriction.

3.2 Traffic Surveys

3.2.1 To support the preparation of this TA, traffic surveys were undertaken on the local highway in May 2018.

3.2.2 Automatic Traffic Counters (ATC) were placed on a number of roads in the vicinity of the site. The ATCs were on-street for the period of one week, from Friday 11th May to Thursday 17th May, inclusive. The ATCs provide traffic volume and vehicle speed data for the surveyed roads. **Table 3.1** provides a summary of the ATC survey results.

Table 3.1: Traffic Volumes – Average Daily Traffic Flow

Kew Foot Road - Northbound	Kew Foot Road - Southbound	Evelyn Road – Eastbound	Shaftesbury Road – Westbound
165	409	128	477

3.2.3 The survey results presented in **Table 3.1** indicate that the average two-way 24-hour traffic flow on Kew Foot Road is 574 vehicles.

3.2.4 In terms of vehicle classifications, the majority of vehicles using Kew Foot Road, Evelyn Road and Shaftesbury Road are cars or Light goods Vans (LGVs). However, some larger vehicles have been identified as using these streets, as detailed in **REF _Ref523492241 \h * MERGEFORMAT Table 3.2** below.

Table 3.2: Total Weekly HGV Movements (two-way where applicable)

Street	3 Axle Rigid Lorry	4 Axle Rigid Lorry	3 Axle Articulated Lorry	4 Axle Articulated Lorry	5 Axle Articulated Lorry	6 Axle Articulated Lorry
Kew Foot Road	15	17	2	0	0	3
Evelyn Road	4	16	0	0	0	3

Shaftsbury Avenue	4	6	0	0	0	0

3.3 Parking Restrictions

3.3.1 The Site is located within Richmond's Controlled Parking Zone N. Parking restrictions are in place on all streets in the vicinity of the Site. A plan showing local parking restrictions in the vicinity of the Site is provided within **Appendix C**.

3.3.2 Parking stress surveys were undertaken on local streets on the 17th and 18th of May 2018 between 00:30-05:30 and 10:30-14:00. This sought to establish both the overnight parking conditions, when resident parking can be considered to be at its peak, and daytime parking conditions when the hospital is in operation.

3.3.3 The full parking survey results are provided within **Appendix D**. A summary of the parking survey results is presented below.

3.3.4 The survey sought to establish on-street car parking conditions for the highway with an approximate 200 metres walk distance from the site. All local streets in this area were included in the survey, these being:

- Ashley Road
- Evelyn Gardens
- Evelyn Road
- Evelyn terrace
- Jocelyn Road
- Kew Foot Road
- Kew Road
- Lenton Rise
- Old Deer Park Gardens
- Rosedale Road
- Shaftsbury Road
- St. Johns Grove
- Tower Rise
- Twickenham Road

The survey identified cars parking in areas that were permitted and those that were not permitted, and an overall summary of the survey results is provided in **Table 3.3** and **Table 3.4** below.

Table 3.3: On-street Car Parking Demand – Full Study Area

Restriction / Beat Time	Maximum Parking Capacity	Thursday 17 May 2018		Friday 18 May 2018	
		00:30-05:30	10:30-14:30	00:30-05:30	10:30-14:30
Business Permit Holder Parking	4	3	4	2	3
Business / Resident Permit Parking	10	0	7	0	7
Bus Stops	11	0	0	0	0
Car Club Parking	1	1	1	1	1
Disabled Parking	4	4	4	4	4
Drop Kerbs	80	3	1	3	2
Double Red Line Restrictions	43	0	0	0	0
Double Yellow Lines	71	0	0	0	2
Keep Clear Markings	1	0	0	0	0
Loading Bay	5	0	2	1	1
Pay & Display Bays	17	7	14	10	12
Parking Bay	2	0	2	0	0
Pedestrian Crossings	5	0	0	0	0
Controlled Resident Parking	203	176	160	179	152
Residents/ Perpendicular Parking	28	21	15	19	15
Shared Use (Residents / Voucher)	70	52	49	52	56
Shared Use/ Perpendicular Parking	10	2	7	1	8
Single Yellow Lines	85	3	1	3	2
Single Yellow Line Undesirable	42	0	0	0	0
Single Yellow Line/ Bus Lane	16	0	2	0	0
Unrestricted/ Perpendicular Parking	2	2	1	2	2
Zig Zag Markings	5	0	0	0	0

Table 3.4: On-street Car Parking % Utilisation – Full Study Area

Restriction / Beat Time	Maximum Parking Capacity	Thursday 17 May 2018		Friday 18 May 2018	
		00:30-05:30	10:30-14:30	00:30-05:30	10:30-14:30
Business Permit Holder Parking	4	75.0%	100.0%	50.0%	75.0%
Business / Resident Permit Parking	10	0.0%	70.0%	0.0%	70.0%
Bus Stops	11	0.0%	0.0%	0.0%	0.0%
Car Club Parking	1	100.0%	100.0%	100.0%	100.0%
Disabled Parking	4	100.0%	100.0%	100.0%	100.0%
Drop Kerbs	80	3.8%	1.3%	3.8%	2.5%
Double Red Line Restrictions	43	0.0%	0.0%	0.0%	0.0%
Double Yellow Lines	71	0.0%	0.0%	0.0%	2.8%
Keep Clear Markings	1	0.0%	0.0%	0.0%	0.0%
Loading Bay	5	0.0%	40.0%	20.0%	20.0%
Pay & Display Bays	17	41.2%	82.4%	58.8%	70.6%
Parking Bay	2	0.0%	100.0%	0.0%	0.0%
Pedestrian Crossings	5	0.0%	0.0%	0.0%	0.0%
Controlled Resident Parking	203	86.7%	78.8%	88.2%	74.9%
Residents/ Perpendicular Parking	28	75.0%	53.6%	67.9%	53.6%
Shared Use (Residents / Voucher)	70	74.3%	70.0%	74.3%	80.0%
Shared Use/ Perpendicular Parking	10	20.0%	70.0%	10.0%	80.0%
Single Yellow Lines	85	3.5%	1.2%	3.5%	2.4%
Single Yellow Line Undesirable	42	0.0%	0.0%	0.0%	0.0%
Single Yellow Line/ Bus Lane	16	0.0%	12.5%	0.0%	0.0%
Unrestricted/ Perpendicular Parking	2	100.0%	50.0%	100.0%	100.0%
Zig Zag Markings	5	0.0%	0.0%	0.0%	0.0%

3.3.5 The surveys have established that parking overnight, in resident only controlled car parking bays is high with parking stress, for the study area as a whole, exceeding 85% on both overnight surveys undertaken. The parking stress for these areas was observed to be lower in the day with less than 80% of bays occupied at this time.

3.3.6 Bays that are subject to pay and display controls (located in Evelyn Road, Jocelyn Road, Kew Road, Old Deer Gardens) were not fully utilised at the time of the surveys, particularly overnight.

3.3.7 Resident only car parking spaces on streets that are in the immediate vicinity of the Site, Kew Foot Road, Evelyn Road and Shaftesbury Road, were all observed to be well utilised both during the day and overnight.

3.3.8 There are 11 parking bays that are located on Kew Foot Road directly opposite the Site, that are allocated to business permit holders during the day (Monday to Friday) and residents permit holders only for part of the day on a Saturday, were not observed to be utilised at all overnight. These are spaces that could be used by existing local residents for additional parking, at times when the controlled car parking zone is not in operation. These spaces were not observed to be fully utilised during the day.

3.3.9 On-street pay and display car parking bays in the local area were not fully utilised during the either the daytime or overnight car parking surveys.

Hospital Car Park

3.3.10 The survey included a count of car parking demand at the existing car park shared between the Richmond Royal Hospital (RRH) and Richmond Rehabilitation Unit (RRU) car park. The RRH is allocated 21 spaces and the RRU 10 spaces. The RRH car park operates on a pay and display basis for visitors with a charge £2.00 for up to 24 hours and staff can park with a valid permit. The results of the survey are summarised below in **Table 3.5**.

Table 3.5: Hospital Car Park Survey

Restriction / Beat Time	Maximum Parking Capacity	Thursday 17 May 2018		Friday 18 May 2018	
		00:30-05:30	10:30-14:30	00:30-05:30	10:30-14:30
Hospital car park	25	1 cars	25 cars	2 cars	17 cars
		4.0% utilised	100.0% 4.0% utilised	8.0% 4.0% utilised	68.0% 4.0% utilised

3.3.11 The survey established that the car park was well used during the day, but was not utilised overnight.

3.4 Road Safety

3.4.1 In order to establish whether there are any inherent road safety concerns on the local highway network in the vicinity of the Site, Personal Injury Collision (PIC) data has been obtained from Transport for London (TfL). The collision records provide data for a five year period to the 31st December 2017. The data is attached as **Appendix E** of this report.

3.4.2 The study area encompasses roads close to the Site, including A316 Twickenham Road (west of St John's Grove), Kew Foot Road, Shaftesbury Road, Evelyn Road and Kew Road. A summary of the PIC data is presented in **Table 3.6**.

Table 3.6: Personal Injury Collision Data

Location	Slight	Serious	Fatal	Total
Kew Foot Road	3	0	0	3
Kew Road / Shaftesbury Road	2	0	0	2
Kew Road / Evelyn Road	2	0	0	2
Evelyn Terrace	0	0	0	0
Evelyn Road	0	0	0	0
Shaftesbury Road	0	0	0	0
Twickenham Road (West of St John's Grove)	6	1	1	8
Total	**13**	**1**	**1**	**15**

3.4.3 None of the collisions occurred on the Site's immediate frontage, and none are associated with the Site's vehicular accesses.

Kew Foot Road/ St. John's Grove

3.4.4 Three collisions resulting in 'slight' injury are identified in the PIC data to have taken place along Kew Foot Road. All three collisions occurred between a car and a cyclist. The PIC data description for the first collision indicates that a car edged out onto the main road into the path of a cycle causing the collision. The collision occurred on Kew Foot Road approximately 80m north of the junction with Twickenham Road.

3.4.5 The description provided for the second collision states that a car was joined the road from the rugby club ground and had not seen the cycle on the shared use cycle track. The collision factors provided indicate that vehicle two performed a poor turn or manoeuvre and vehicle one failed to judge the other vehicles path or speed.

3.4.6 No description is provided for the third collision.

A316 Twickenham Road (West of St. John's Grove Junction)

3.4.7 The PIC data indicates that eight collisions occurred on the A316 Twickenham Road west of the St. John's Grove junction. The PIC data indicates that six of the collisions resulted in 'slight' injury, one collision resulted in a 'serious' injury and one collision was classified as fatal.

3.4.8 The PIC data indicates that one serious collision occurred on the A316 Twickenham Road in proximity to the junction leading to 'Pools on the Park'. The PIC data indicates that the collision occurred between a car and a 'goods vehicle'. The collision description provided indicates that vehicle two (goods vehicle) had a brake failure coming to a stop, this resulted in vehicle two shunting vehicle one (car) who was stopped. Defective brakes is the only causation factor attributed to the collision.

3.4.9 The PIC data indicates that one fatal collision occurred on the A316 Twickenham Road close to the St John's Grove Junction. The data indicates that the collision involved a cyclist and a Heavy Goods Vehicle (HGV). The collision description provided indicates that an HGV turned left as a bicycle was entered the road from pavement, into the HGV's path. A number of causation factors have been provided within the collision data interpretation, as follows:

- Sudden Braking;
- Carless/ reckless/ in a hurry;
- Failed to look properly;
- Cyclist entering road from pavement.
- Failed to look properly; and
- Failed to judge other person's path or speed.

3.4.10 The TfL collision data has shown that a number of collisions occurred at the A136 and Kew Foot Road junction, all collisions were classified as 'slight' collisions.

Kew Road Junction with Shaftesbury Road

3.4.11 The PIC data indicates that two collisions occurred on Kew Road in the vicinity of the junction with Shaftesbury Road. The PIC data indicates both collisions results in 'slight' injury. The PIC data indicates that first collision occurred between a car and a cyclist, the second collision occurred between a car and a motorcycle.

Kew Road Junction with Evelyn Road

3.4.12 The PIC data indicates that two collisions occurred on Kew Road in the vicinity of the junction with Shaftesbury Road. The PIC data indicates both collisions results in 'slight' injury and that both collisions occurred between a car and a pedestrian.

Shaftesbury Road and Evelyn Road

3.4.13 There were no recorded personal injury collisions in Shaftesbury Road, Evelyn Road and the section of Kew Foot road in the immediate vicinity of the Site.

4 Proposed Development Scheme

4.1 Development Overview

4.1.1 The proposed development will provide a total of 68 residential units (C3 land use) and 500 sq.m of community healthcare facilities (D1 land use). The residential development comprises of 2 x studio apartments, 23 x 1 bed apartments, 30 x 2 bed apartments, 7 x 3 bed apartments and 6 x 4 bed apartments.

4.1.2 The development is proposed as a low car development and 25 car parking spaces will be provided within the basement of the development. An additional four parking spaces will be retained within the Site boundary that will be accessed directly from Kew Foot Road, as they are at present. The low car nature of the development is intended to support sustainable travel patterns by Site residents, which are considered to be achievable given the Site's high PTAL rating (PTAL 6a).

4.1.3 Overall, 29 car parking spaces are proposed to support the Site's residential development and this equates to an average car parking ratio of 0.43 car parking spaces per unit. Three parking spaces will be allocated for blue badge holders, two will be accessed from Kew Foot Road and one in the basement car park.

4.1.4 Vehicular access to/ from the development will be retained from both Evelyn Road and Shaftesbury Road.

4.2 Pedestrian Access

4.2.1 Pedestrian access to the proposed residential units would be via a main entrance in Kew Foot Road and via a secondary in Evelyn Road.

4.2.2 Pedestrian access will also be provided to a central courtyard directly from Evelyn Road and Shaftesbury Road.

4.2.3 Pedestrian access to the proposed community healthcare facility would be from Evelyn Road.

4.3 Vehicle and Cycle Parking Provision

Car Parking Provision

4.3.1 A total of 25 car parking spaces will be provided within the basement of the development for the use of site residents. The parking spaces will be accessed via a car lift. Cars waiting to access the car lift will do so from within the development site. A car waiting to access the car lift will not block the access for other road users.

4.3.2 **Table 4.1** provides an estimate for future resident car ownership, based on data collected for the Ward of North Richmond in the 2011 Census. The assessment demonstrates that based on current car ownership levels, 38 cars can be expected to be owned by the Site's residential population.

Table 4.1: 2011 Census – Car Ownership Estimation

Habitable Rooms	No. Households	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 or more cars or vans in household	Total Cars	Average Cars per household	Proposed Development	Potential Car Ownership
1 - 3 rooms	1,010	573	384	50	3	493	0.488	55	27
4 rooms	721	258	394	65	4	536	0.743	7	5
5 rooms	189	53	104	25	7	175	0.926	6	6
6 rooms	30	8	18	3	1	27	0.900	0	0
7 rooms	14	5	6	3	0	12	0.857	0	0
8 or more rooms	26	9	14	1	2	22	0.846	0	0
Total	**1,990**	**906**	**920**	**147**	**17**	**1,265**	**5**	**71**	**38**

4.3.3 However, the low car nature of the development, and the excellent level of access to public transport services, is likely to mean that car ownership rates at Richmond Royal Hospital will be below those that are experienced elsewhere. The reasons for this are as follows:

- Based on research undertaken to support the New London Plan (December 2017) we know that *"there is a clear relationship between the availability of car parking at new development and the levels of car ownership of its residents."* Research conducted with London residents in 2013 found that for all groups, and in all areas, people living in developments with more parking available had higher levels of car ownership than people living in developments with less parking. In developments with provision of up to 1 space per unit, car ownership varies with the level of public transport connectivity (PTAL) – as people's alternatives get better, fewer choose to own a car. This means fewer spaces, fewer cars. The low car nature of the development is therefore likely to encourage a lower level of car ownership than would otherwise be the case.

- It is anticipated that site residents will not be permitted on-street car parking permits and that this restriction will be secured by legal agreements. The residential development will not therefore have a negative impact on the operation of the existing controlled car parking zone.

- A Residential Travel Plan has been developed which includes a commitment to fund Car Club membership for each household on-site, on first site occupation. Car Clubs provide the opportunity for residents to access a car when needed, without the need for a resident to own a car. In terms of the ability to reduce car ownership levels, Zipcar, a local Car Club operator, says that every one of their Car Club vehicles takes an average of 10 to 15 privately owned cars off the roads of the UK, because members often sell (or don't replace) a car when they join the Car Club.

- Since the 2011 Census was undertaken car ownership and usage has fallen across London.

4.3.4 In summary, the proposed residential development can expect to experience car ownership levels that are well below those experienced locally.

4.3.5 The development will provide electric car charge points for motor cars, in line with the policy of the adopted London Plan, which requires 20% of all parking spaces to be provided with an active car charge point, and passive provision for a further 20% of all car parking spaces.

4.3.6 The Site's proposed healthcare facility will operate car free, with non-car site access by staff to be supported by a Workplace Travel Plan. Healthcare site visitors that have a disabled parking badge will be able to park on-street, in defined on-street car parking bays for blue badge holders or in areas that are allow disabled badge parking to take place. These include resident and business permit holder bays within the local Controlled Parking Zones, and in 'pay and display' car parking bays.

Cycle Parking

4.3.7 Cycle parking will be provided in accordance with the adopted London Plan's minimum cycle parking standards.

4.3.8 The proposed development will therefore provide a total of 130 long stay cycle parking spaces and 16 short stay cycle parking spaces. Long stay cycle parking will be provided at basement level within the residential block. **Table 4.1** provides a summary of the proposed cycle parking provision.

Table 4.1: Cycle Parking Provision

Residential		Health Centre	
Long Stay Spaces	**Short Stay Spaces**	**Long Stay Spaces**	**Short Stay Spaces**
122	2	8	14

4.4 Delivery and Servicing

4.4.1 Delivery and servicing for the proposed development will take place within the Site via the existing vehicular access, located between Evelyn Road and Shaftesbury Road.

4.4.2 Light Goods Vehicles (LGVs) will make up the majority of deliveries to the Site. Vehicle swept path analysis has been undertaken to show an LGV entering the Site via Evelyn Road and existing on to Shaftesbury Road. This is provided within **Appendix F** of this report.

4.4.3 Bin stores are to be located at the rear of the Site. Swept path analysis showing a refuse vehicle entering the site via Evelyn Road and exiting onto Shaftesbury Road is also provided within **Appendix F**.

4.4.4 Due to the narrowness of Evelyn Road and Shaftsbury Road, and the associated on-street car parking provision that acts to constrain access by large HGVs, it is envisaged that a compact refuse vehicle would service the Site. However, importantly the development proposal will not narrow the Site's access and the development will not result in any additional constraint to vehicular movement in the area. The vehicle tracking provided in **Appendix F** shows a 6.6m long refuse vehicle accessing Evelyn Road and Shaftsbury Road to serve the Site.

4.4.5 A Delivery and Servicing Plan (DSP) has been prepared to support the development project and this is provided as a standalone document, submitted as part of the planning application.

5 Trip Attraction and Generation

5.1 Preface

5.1.1 This chapter provides an assessment of the trip generation associated with the proposed development.

5.1.2 A robust assessment of the forecast multi-model trip generation has been undertaken in relation to the proposed residential and health care developments.

5.2 Existing Hospital Traffic Movements

5.2.1 The site's current use is a medical centre providing out-patient services which occupies approximately 1,015sq.m of the existing building. There are 31 on-site car parking spaces, of which three are reserved for disabled drivers. The adjacent Richmond Rehabilitation Unit (RRU) provides ten off-street parking spaces including two spaces for blue badge holders. The Richmond Rehabilitation unit encompass a Gross External Area of approximately 471 sq.m.

5.2.2 Traffic surveys were undertaken in May 2018 in order to understand the vehicle movements associated with the existing development. The traffic surveys were undertaken on a Wednesday and Thursday over a 48 hour period, recording vehicles entering the Site via and Evelyn Road and exiting onto Shaftesbury Road. The survey will include journeys to both Richmond Royal Hospital and the RRU.

5.2.3 Over the course of a 24-hour period, the traffic surveys show the following number of vehicles entering and exiting the Site (excluding cycles and motorcycles):

- Wednesday 16th May – 86 arrivals and 85 departures; and
- Thursday 17th May – 95 arrivals and 95 departures

5.2.4 The survey included a count of arrivals and departures associated with on-site parking access directly from Kew Foot Road. The survey established that a total of 10 arrivals and 10 departures were associated with these spaces throughout the day.

5.2.5 It can be assumed that Richmond Royal Hospital and the RRU have a similar trip rates. The combined area of 1,486 sq.m attracted a total of 95 vehicular arrivals and 95 vehicular departures on its busiest day. This equates to approximately 6.39 arrival trips per 100 sq.m and 6.39 departures per 100 sq.m.

5.2.6 If the unused floor area at Richmond Royal Hospital were to be brought back in to a healthcare use a further 539 sq.m of floor area would generate additional vehicle demand. This would be equivalent of a total of 2,025 sq.m of healthcare (including the RRU) and could lead to a total of 128 vehicular arrival and 128 vehicular departures daily.

5.3 Proposed Development Trip Generation - TRICS Assessment

Residential Development

5.3.1 The TRICS v.7.5.2 database has been interrogated to establish the average multi-modal trip rates for the proposed residential development. TRICS is the industry standard tool for the assessment of trip attraction and generation associated with proposed developments.

5.3.2 Sites with the heading 03-Residential and sub-heading C-Flats Privately Owned have been examined. Only sites located within Greater London have been examined.

5.3.3 Sites with a similar car parking ratio to the proposed development, in the range of 0.25 to 0.5 spaces per dwelling, have been examined in order to be comparable to the Site. A multi-modal person trip rate has therefore been determined from three suitable sites in London. Full details of the TRICS assessment are provided in **Appendix G** to this report, and a summary of the predicted person trips and vehicle movements for the residential development are provided in **Table 5.** and **Table 5.2** below.

Table 5.1: TRICS Assessment – Residential Person Trip Generation (68 Flats)

Time Range	Trip Rate (per dwelling)			Trip Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
07:00-08:00	0.044	0.176	0.220	3	12	15
08:00-09:00	0.047	0.290	0.337	4	20	24
09:00-10:00	0.053	0.105	0.158	4	8	12
10:00-11:00	0.066	0.118	0.184	5	9	14
11:00-12:00	0.106	0.115	0.221	8	8	16
12:00-13:00	0.100	0.109	0.209	7	8	15
13:00-14:00	0.099	0.131	0.230	7	9	16
14:00-15:00	0.121	0.123	0.244	9	9	18
15:00-16:00	0.156	0.119	0.275	11	9	20
16:00-17:00	0.189	0.122	0.311	13	9	22
17:00-18:00	0.224	0.101	0.325	16	7	23
18:00-19:00	0.191	0.088	0.279	13	6	19
Total	**1.396**	**1.597**	**2.993**	**100**	**114**	**214**

Table 5.2: TRICS Assessment - Residential Traffic Generation (68 Flats)

Time Range	Trip Rate (per dwelling)			Trip Generation		
	Arrivals	Departures	Total	Arrivals	Departures	Total
07:00-08:00	0.018	0.043	0.061	1	3	4
08:00-09:00	0.020	0.052	0.072	1	4	5
09:00-10:00	0.024	0.027	0.051	2	2	4
10:00-11:00	0.019	0.025	0.044	1	2	3
11:00-12:00	0.019	0.023	0.042	1	2	3
12:00-13:00	0.018	0.019	0.037	1	1	2
13:00-14:00	0.036	0.035	0.071	2	2	4
14:00-15:00	0.030	0.030	0.060	2	2	4
15:00-16:00	0.036	0.028	0.064	2	2	4
16:00-17:00	0.050	0.037	0.087	3	3	6
17:00-18:00	0.061	0.024	0.085	4	2	6
18:00-19:00	0.054	0.029	0.083	4	2	6
Total	**0.400**	**0.396**	**0.796**	**24**	**27**	**51**

5.3.4 In terms of person trips, the proposed residential development is estimated to generate 214 two-way trips over the course of a 12 hour weekday (07:00-19:00).

5.3.5 The TRICS data presented in **Table 5.2** indicates that residential development is predicted to generate one vehicular arrival and four vehicular departures in the traditional AM peak. In the traditional PM peak the development is anticipated to generate four arrivals and two departures. The proposed residential development is anticipated to generate 24 arrivals and 27 departures per day (07:00 to 19:00).

Proposed Health Centre

5.3.6 The TRICS v.7.5.2 database has been interrogated to establish the average multi-modal trip rates for the proposed 500sq.m Health Centre. Sites with the heading 05-Health and sub-heading E-Clinics have been examined. As both sites were outside of Greater London they were used to generate an estimate of the total people trips before applying a more representative modal shared based on the 2011 census data for the local area. The TRICS sites presented within **Table 5.3** were selected from the TRICS database as having similar characteristics to the proposed health centre.

Table 5.3: TRICS Sites

Site Reference	Description	Area	GFA	Parking	Employ
LN-05-E-01	Clinic	Grantham	1400	19	60
TW-05-E-01	Alternative Clinic	North Shields	215	4	15

5.3.7 The total person trip rates (trips per 100sq.m) for the proposed Healthcare development, and the resultant trips, are presented in **Table 5.4.**

Table 5.4: Total Proposed Person Trips – 500sq.m Floor Area

Time Range	Trip Rate (per 100sq.m)			Trip Attraction (500sq.m floor space)		
	Arrivals	**Departures**	**Total**	**Arrivals**	**Departures**	**Total**
07:00-08:00	0.124	0.000	0.124	1	0	1
08:00-09:00	2.043	0.372	2.415	10	2	12
09:00-10:00	2.972	1.362	4.334	15	7	22
10:00-11:00	1.115	2.663	3.778	6	13	19
11:00-12:00	2.105	1.424	3.529	11	7	18
12:00-13:00	1.672	1.672	3.344	8	8	17
13:00-14:00	2.229	1.858	4.087	11	9	20
14:00-15:00	1.486	1.672	3.158	7	8	16
15:00-16:00	0.991	1.858	2.849	5	9	14
16:00-17:00	0.619	1.238	1.857	3	6	9
17:00-18:00	0.124	0.867	0.991	1	4	5
18:00-19:00	0.000	0.124	0.124	0	1	1
Total	**15.48**	**15.11**	**30.59**	**77**	**76**	**153**

5.3.8 In order to estimate the number of vehicular trips for the proposed healthcare development, the car driver mode split, as identified in **Table 2.4** of this report, has been applied to the person trip data presented in **Table 5.4**. The resultant vehicle trips for the proposed Healthcare development are presented in Table **5.4** below.

Table 5.5: Vehicular Trip Attraction, Proposed 500 sq.m Health Centre

Time Range	Traffic Attraction		
	Arrivals	**Departures**	**Total**
07:00-08:00	0	0	0
08:00-09:00	4	1	5
09:00-10:00	6	3	8
10:00-11:00	2	5	7
11:00-12:00	4	3	7
12:00-13:00	3	3	7
13:00-14:00	4	4	8
14:00-15:00	3	3	6
15:00-16:00	2	4	6
16:00-17:00	1	2	3
17:00-18:00	0	2	2
18:00-19:00	0	0	0
Total	**30**	**29**	**59**

5.3.9 The assessment indicates that around 30 vehicle arrivals could be expected to the Site over the course of a typical day. However, it should be recognised that the healthcare development will operate car free. While there is the ability for cars with disabled badge holders to park on-street, either in dedicated on-street car parking bays, or in resident or permit holder parking bays, the car free nature of the development will deter car driver movements from taking place in association with the facility.

5.4 Proposed Development - Total Person and Vehicular Movements

Tables 5.6 and **5.7** overleaf present the total anticipated person and vehicular movements for the proposed development.

Table 5.6: Proposed Development, Total Person Trips

Time Range	Trip Generation		
	Arrivals	**Departures**	**Total**
07:00-08:00	4	12	16
08:00-09:00	14	22	36
09:00-10:00	19	15	34
10:00-11:00	11	22	33
11:00-12:00	19	15	34
12:00-13:00	15	16	31
13:00-14:00	18	18	36
14:00-15:00	16	17	33
15:00-16:00	16	18	34
16:00-17:00	16	15	31
17:00-18:00	17	11	28
18:00-19:00	13	7	20
Total	**178**	**188**	**366**

Table 5.7: Proposed Development, Total Vehicle Movements

Time Range	Trip Generation		
	Arrivals	**Departures**	**Total**
07:00-08:00	1	3	4
08:00-09:00	5	5	10
09:00-10:00	8	5	12
10:00-11:00	3	7	10
11:00-12:00	5	5	10
12:00-13:00	4	4	9
13:00-14:00	6	6	12
14:00-15:00	5	5	10
15:00-16:00	4	6	10
16:00-17:00	4	5	10
17:00-18:00	4	4	8
18:00-19:00	4	2	6
Total	**54**	**57**	**111**

5.4.1 **Table 5.7** identifies that the total traffic movements associated with the proposed development are lower than those associated with the existing hospital site. This can be expected as the turnover of car parking spaces for the Site's proposed basement car park will be lower than those currently provided in the hospital car park.

5.4.2 Currently there is no deterrent against car travel, with an open and accessible car parking available to hospital visitors. In future the low car residential development, and car free healthcare facility, would not be expected to generate a significant number of traffic movements.

Summary

5.4.3 Based on car parking surveys undertaken at the existing site including the RRU it is estimated that there could be 128 arrivals and 128 departures (256 movements) over 12 hours if the unused hospital was brought back into use. As can be seen from **Table 5.7** the predicted number of vehicles with the development as proposed would be 54 arrivals and 57 departures (111 movements) - a reduction of 145 movements.

5.5 Delivery and Servicing Movements

5.5.1 A DSP has been prepared as a standalone document to support the planning application. The document includes an estimate of service and delivery trips associated with the Richmond Hospital development project. The estimates are based on traffic survey data from comparable development sites, as detailed in the TRICS database. **Table 5.8** below provides a summary of the potential service vehicle trip attraction for the proposed residential development.

Table 5.8: Proposed Residential Development, Service and Delivery Traffic Movements

Time Range	INBOUND					OUTBOUND				
	Car	LGV	OGV1	OGV2	Total	Car	LGV	OGV1	OGV2	Total
07:00-08:00	0	0	0	0	0	0	0	0	0	0
08:00-09:00	0	0	0	0	0	0	0	0	0	0
09:00-10:00	0	0	0	0	0	0	1	0	0	1
10:00-11:00	0	0	1	0	1	0	1	1	0	2
11:00-12:00	0	1	0	0	1	0	0	0	0	0
12:00-13:00	0	0	0	0	1	0	1	0	0	1
13:00-14:00	0	1	0	0	1	0	1	0	0	1
14:00-15:00	0	0	0	0	0	0	0	0	0	1
15:00-16:00	0	0	0	0	0	0	0	0	0	0
16:00-17:00	0	1	0	0	1	0	1	0	0	1
17:00-18:00	0	0	0	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	0	0	0	0
Total	**0**	**5**	**1**	**0**	**6**	0	5	**1**	**0**	**6**

5.5.2 **Table 5.8** establishes that the majority of service vehicle trips would be expected to be made by Light Goods Vans (LGVs), with the potential for an occasional larger rigid lorry to arrive on-site, such as a refuse lorry.

5.5.3 Over the course of a typical 12-hour day (07:00-19:00), the development can be expected to attract six service or delivery vehicle movements.

5.5.4 It is recognised that the existing hospital site will already receive service and delivery vehicle trips, and as a result of the development the size of the healthcare facility will reduce to 500sq.m. It can be expected that the number of service and delivery trips associated with the healthcare land use will also reduce as a result of the development project. Notwithstanding the above an assessment has been undertaken to estimate the number of delivery and service trips that could be expected in association with the healthcare facility.

5.5.5 This assessment is again based on survey data contained in the TRICS database and a summary of the assessment outcome is provided in **Table 5.9** below.

Table 5.9: Proposed Healthcare Development, Service and Delivery Traffic Movements

Time Period	INBOUND					OUTBOUND				
	Car	LGV	OGV1	OGV2	Total	Car	LGV	OGV1	OGV2	Total
07:00-08:00	0	0	0	0	0	0	0	0	0	0
08:00-09:00	0	1	1	0	2	0	1	1	0	1
09:00-10:00	0	1	0	0	1	0	1	0	0	1
10:00-11:00	2	1	0	0	3	2	1	0	0	3
11:00-12:00	0	1	0	0	1	0	1	0	0	1
12:00-13:00	0	1	0	0	1	0	1	0	0	1
13:00-14:00	0	1	0	0	1	0	1	0	0	1
14:00-15:00	0	0	0	0	0	0	0	0	0	0
15:00-16:00	0	1	0	0	1	0	1	0	0	1
16:00-17:00	0	0	0	0	0	0	0	0	0	0
17:00-18:00	0	0	0	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	0	0	0	0
Total	**2**	**7**	**1**	**0**	**10**	**2**	**7**	**1**	**0**	**10**

5.5.6 As with the residential development, the TRICS assessment has established that the majority of trips will be undertaken by small motor vehicles, in this case being by car or by LGV.

5.5.7 Over the course of a typical 12-hour day (07:00-19:00), the development can be expected to attract ten service or delivery vehicle movements.

5.5.8 **Table 5.10** below presents the total service and delivery trips for the proposed development site.

Table 5.10: Total Proposed Service and Delivery Traffic Movements

Time Period	INBOUND					OUTBOUND				
	Car	LGV	OGV1	OGV2	Total	Car	LGV	OGV1	OGV2	Total
07:00-08:00	0	0	0	0	0	0	0	0	0	0
08:00-09:00	0	1	1	0	2	0	1	1	0	1
09:00-10:00	0	1	0	0	1	0	2	0	0	2
10:00-11:00	2	1	1	0	4	2	2	1	0	5
11:00-12:00	0	2	0	0	2	0	1	0	0	1
12:00-13:00	0	1	0	0	2	0	2	0	0	2
13:00-14:00	0	2	0	0	2	0	2	0	0	2
14:00-15:00	0	0	0	0	0	0	0	0	0	1
15:00-16:00	0	1	0	0	1	0	1	0	0	1
16:00-17:00	0	1	0	0	1	0	1	0	0	1
17:00-18:00	0	0	0	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	0	0	0	0
Total	**2**	**12**	**2**	**0**	**16**	**2**	**12**	**2**	**0**	**16**

6 Policy Review

6.1 Preface

6.1.1 This section of the Transport Assessment sets out the national, regional and local development control and transport planning policies which are relevant to the development.

6.2 National Policy

National Planning Policy Framework (NPPF)

6.2.1 The National Planning Policy Framework (NPPF) was published in July 2018 by the 'Ministry of Housing, Communities and Local Government' and is the primary source of national planning guidance in England.

6.2.2 The NPPF contains the Government's strategies for economic, social and environmental planning policies in England and it is designed to be a single, tightly focused document.

6.2.3 At the heart of the NPPF (Paragraph 11) is a "presumption in favour of sustainable development", which for decision making means:

> *"c) Approving development proposals that accord with an up-to-date development plan without delay; or*
>
> *d) Where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:*
>
> > *i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or*
> >
> > *ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."*

6.2.4 Under the heading 'Promoting Sustainable Transport' paragraphs 102 and 103 of the NPPF requires the planning system to actively manage patterns of growth in order to address the potential impacts of development on transport networks.

6.2.5 Paragraph 109 of the NPPF states that *"development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

6.2.6 Paragraph 111 of the NPPF states that *"all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."*

6.2.7 This Transport Assessment has assessed the likely transport impacts of the proposed development on the surrounding transport infrastructure.

6.2.8 A Travel Plan has been prepared for the proposed development and is submitted with the planning application as a standalone document.

National Planning Practice Guidance

6.2.9 The National Planning Policy Guidance (NPPG) provides national government's guidance on the preparation of Transport Assessments and Travel Plan documents.

6.2.10 The guidance sates that TAs and Travel Plans can positively contribute to the following, amongst other factors:

- *'encouraging sustainable travel;*
- *lessening traffic generation and its detrimental impacts;*
- *creating accessible, connected, inclusive communities; and*
- *reducing the need for new development to increase exiting road capacity or provide new roads'.*

6.2.11 The NPPG identifies key contents of a TA, including:

- *the planning context of the development proposal;*
- *road trip generation and trip distribution methodologies and/or assumptions about the development proposal; and*
- *measures to promote sustainable travel'.*

6.2.12 This TA has sought to accord with the requirements of the NPPG.

6.3 Regional Planning Guidance - London Plan

The Adopted London Plan, 2016

6.3.1 Policy 6.3 of the London Plan *"Assessing Effects of Development on Transport Capacity – Planning Decisions"* seeks to ensure that development schemes fully consider their implications for the wider transport network and requires that new development does not have an adverse impact on safety. Items A to C of the policy are outlined below:

- *"A – Development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, and fully assessed. Development should not adversely affect safety on the transport network.*
- *"B - Where existing transport capacity is insufficient to allow for the travel generated by proposed developments, and no firm plans exist for an increase in capacity to cater for this, boroughs should ensure that development proposals are phased until it is known these requirements can be met, otherwise they may be refused. The cumulative impacts of development on transport requirements must be taken into account."*

- *"C-Transport assessments will be required in accordance with TfL's Transport Assessment Best Practice Guidance for major planning applications. Workplace and/or residential travel plans should be provided for planning applications exceeding the thresholds in, and produced in accordance with, the relevant TfL guidance. Construction logistics plans and delivery and servicing plans should be secured in line with the London Freight Plan and should be co-ordinated with travel plans.*

6.3.2 The TfL guidance of the preparation of Travel Plans says that a full Travel Plan is required for residential development of over 80 residential units, and for healthcare facilities with more than 50 staff. For developments that do not meet these thresholds a lesser Travel Statement may be required. Of note, Travel Plans have been prepared for the both the residential and healthcare developments on-site, and these are submitted as standalone documents as part of the planning submission.

6.3.3 Furthermore, a 'Delivery and Servicing Plan' and a 'Construction and Logistics Plan' have been prepared and submitted as a planning application documents.

6.3.4 Policy 6.3D relates to LDF preparation and states that *"Boroughs should take the lead in exploiting opportunities for development in areas where appropriate transport accessibility and capacity exist or is being introduced."* In the case of Richmond Royal Hospital, the Site is well located to promote access by sustainable modes of transport.

6.3.5 With regards to parking, Policy 6.13A states that *"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 applicant is of the view that the proposed development has sought to strike a suitable balance that means parking is provided at a level which avoids resident impact on on-street parking conditions, while at the same time not encouraging excessive car ownership.

6.3.6 Policy 6.13E states that *"in locations with high public transport accessibility, car-free developments should be promoted (while still providing for disabled people)."*

6.3.7 With regard to cycle parking, the development project will seek to comply with minimum cycle parking standards as set out in the adopted London Plan. The London Plan sets out the following minimum cycle parking standards for residential developments:

- 1 long term space per studio and 1 bedroom unit;
- 2 long term spaces for all other units;
- 1 short term space per 40 units.

6.3.8 The minimum cycle parking standards for D1 health centres are as follows:

- 1 long term space per 5 staff;
- 1 short term space per 3 staff.

6.3.9 The London Plan's maximum residential parking standards states that *"all developments in areas of good public transport accessibility (in all parts of London) should aim for scientifically less than 1 space per unit."* The Site is located in an area with a PTAL rating of 6a, and is therefore suitable as a low car development scheme.

Other Greater London Authority Policy Documentation

6.3.10 The applicant is aware that the Draft New London Plan was published in November 2017. Policies within the document include those associated with *Healthy Streets. At the time of writing, the New London Plan has not been subject to an examination in public.*

6.3.11 The Healthy Streets policy agenda was established in February 2017 when the Mayor published 'Healthy Streets for London – Prioritising walking, cycling and public transport to create a healthy city'. The document identifies that a high proportion of Londoners live inactive lifestyles, which leads to poor health. The 'Healthy Streets for London' document sought to provide a framework of policies and strategies to encourage a greater proportion of people to walk or cycle for at least 20 minutes each day.

6.3.12 The prioritisation of walking, cycling and public transport, over travel by car, is central to policies outlined in both the Mayors' Transport Strategy (July 2017) and Draft New London Plan (November 2017).

6.3.13 Policy T2 of the Draft New London Plan (2017), 'Healthy Streets', states (in part), that development proposals should:

"1. demonstrate how they will deliver improvements that support the ten Healthy Streets Indicators in line with Transport for London guidance.

2. reduce the dominance of vehicles on London's streets whether stationary or moving.

3. be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport."

6.3.14 The Richmond Royal Hospital development has sought to deliver a permeable scheme that is accessible on foot and by cycle. The low car nature of the development will mean that movements on foot and by cycle are encouraged.

6.3.15 The Site's location with respect to Richmond Town Centre and the emerging London Quietway cycle network will encourage journeys to be made to and from the Site on foot, and by cycle.

6.4 Local Development Control Policy

London Borough of Richmond upon Thames (LBRuT) Local Plan, 2018

6.4.1 The LBRuT Local Plan was adopted in July 2018. The Local Plan sets out policy and guidance in relation to development planning in the Borough for the next 15 years.

6.4.2 Policy LP 44 – Sustainable Travel Choices states the following (in part):

"The Council will work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment. The Council will:

A. Location of development

Encourage high trip generating development to be located in areas with good public transport with sufficient capacity, or which are capable of supporting improvements to provide good public transport accessibility and capacity, taking account of local character and context.

B. Walking and cycling

Ensure that new development is designed to maximise permeability within and to the immediate vicinity of the development site through the provision of safe and convenient walking and cycling routes, and to provide opportunities for walking and cycling, including through the provision of links and enhancements to existing networks.

C. Public transport

Ensure that major new developments maximise opportunities to provide safe and convenient access to public transport services. Proposals will be expected to support improvements to existing services and infrastructure where no capacity currently exists or is planned to be provided. Protect existing public transport interchange facilities unless suitable alternative facilities can be provided which ensure the maintenance of the existing public transport operations. Applications will need to include details setting out how such re-provision will be secured and provided in a timely manner.

D. The road network

Ensure that new development does not have a severe impact on the operation, safety or accessibility to the local or strategic highway networks. Any impacts on the local or strategic highway networks, arising from the development itself or the cumulative effects of development, including in relation to on-street parking, should be mitigated through the provision of, or contributions towards, necessary and relevant transport improvements.

In assessing planning applications, the cumulative impacts of development on the transport network will be taken into account. Planning applications will need to be supported by the provision of a Transport Assessment if it is a major development, and a Transport Statement if it is a minor development.

6.4.3 It is considered that the proposed development accords well with this adopted policy, in so far as the development is located in an area with excellent public transport links and the development site permeable, including a route that connects Evelyn Road and Shaftsbury Road. The low car nature of the development will mean that the development will not result in a severe impact on the local highway network.

6.4.4 Policy LP45 outlines the LBRuT policy regarding parking standards. Policy LP45 - Parking standards states the following:

"The Council will require new development to make provision for the accommodation of vehicles in order to provide for the needs of the development while minimising the impact of car based travel including on the operation of the road network and local environment, and ensuring making the best use of land. It will achieve this by:

1. *Requiring new development to provide for car, cycle, 2 wheel and, where applicable, lorry parking and electric vehicle charging points, in accordance with the standards set out in Appendix 3. Opportunities to minimise car parking through its shared use will be encouraged.*

2. *Resisting the provision of front garden car parking unless it can be demonstrated that:*

    a. *. there would be no material impact on road or pedestrian safety;*

    b. *there would be no harmful impact on the character of the area, including the streetscape or setting of the property, in line with the policies on Local Character and Design; and*

    c. *the existing on-street demand is less than available capacity.*

3. *Car free housing developments may be appropriate in locations with high public transport accessibility, such as areas with a PTAL of 5 or 6, subject to:*

    a. *the provision of disabled parking;*

    b. *appropriate servicing arrangements; and*

    c. *demonstrating that proper controls can be put in place to ensure that the proposal will not contribute to on-street parking stress in the locality.*

All proposals for car free housing will need to be supported by the submission of a Travel Plan.

4. *Managing the level of publicly available car parking to support the vitality and viability of town and local centres within the borough whilst limiting its impacts on the road network.*

6.4.5 While the development does not propose car free housing, the proposal is a low car development that will provide car parking at a level that is below current local level of car ownership. It is considered that the development will encourage low levels of car ownership, and sustainable travel patterns, whilst ensuring that the development will not impact on on-street car parking conditions.

7 Summary and Conclusions

7.1 Summary

7.1.1 This Transport Assessment (TA) has been prepared by Royal HaskoningDHV (RHDHV), on behalf of UKI Richmond Limited, to establish the travel implications associated with the proposed redevelopment of the Richmond Royal Hospital.

7.1.2 The proposed development will provide a total of 68 residential units (C3 land use) and 500 sq.m of community healthcare facilities (D1 land use). The residential development comprises of 2 x studio apartments, 23 x 1 bed apartments, 30 x 2 bed apartments, 7 x 3 bed apartments and 6 x 4 bed apartments.

7.1.3 The site is located on Kew Foot Road, adjacent to the Richmond Athletic Ground which is home to Richmond rugby club.

7.1.4 The site is located close to Richmond town centre and a range of local facilities. The site is well served by local transport including buses, London Underground, London Overground and National Rail services. The site has a Public Transport Accessibility Level (PTAL) rating of 6a area, which is the second highest category attainable. The site is consequently considered to be highly accessible by non-car modes.

7.1.5 The proposed development accords to national, regional and local planning policy guidance. The TA has been undertaken in compliance with NPPF objectives and in line with the requirements set out within the LBRuT Local Plan and the London Plan.

7.1.6 The site is located within Richmond's Controlled Parking Zone (CPZ) N, which has operational hours of 10:00 to 16:30, Monday to Saturday. Parking is restricted to resident permit holders, business permit holders, visitor bays and shared use bays.

7.1.7 A review of collision data for the local highway network demonstrates that there is no identifiable pattern of collisions occurring associated with pedestrians and cyclists. It is considered that traffic associated with the development will not have a foreseeable adverse impact on road safety conditions.

7.1.8 Delivery and servicing trips will take place at the rear of the site, delivery and servicing vehicle will access the site via Evelyn Road and exit on Shaftsbury Road.

7.1.9 The development will provide a total of 29 car parking spaces of which 25 are within the basement car park, four existing parking spaces will be retained within the site boundary, accessible from Kew Foot Road. A minimum of six car parking will be provided with electric vehicle charging points and passive provision will be made for a further six bays to equipped to meet future demand, as is required by the adopted London Plan.

7.1.10 Cycle parking will be provided in accordance with the London Plan minimum cycle parking standards. The proposed development provides a total of 130 long stay cycle parking spaces parking and 16 short stay cycle parking space. Long stay cycle parking will be provided at basement level within the residential block.

7.1.11 It is not anticipated that the development will result in an overall increase in motor traffic, and the overall net change in traffic movements that will result from the development will mean a reduction is traffic locally.

7.2 Conclusion

7.2.1 In conclusion, the site benefits from excellent levels of public transport accessibility, pedestrian provision and cycle provision.

7.2.2 The National Planning Policy Framework (NPPF) set's out the Government's planning policies for England and identifies that *"development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."* In accordance with the NPPF it has been demonstrated that the travel demand of the proposed development does not represent a severe residual transport impact.

Appendix A – Local Amenities Isochrone Plan

Appendix B – PTAL Report

Appendix C – Local Parking Restrictions Plan

Appendix D – Parking Survey Results

Appendix E – PIC Data

Appendix F – Swept Path Analysis

Appendix G – TRICS Output