Bloomsbury Research Institute
15-17 Tavistock Place
London

Travel Plan

Wilde

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UCL Tavistock Place TP

Version 1

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UCL and London School of Hygiene & Tropical Medicine – Bloomsbury Research Institute
15-17 Tavistock Place London

Travel Plan

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Travel Plan

1 Introduction

1.1 This Travel Plan has been prepared by Wilde Carter Clack, Consulting Civil Engineers, on behalf of University College London (UCL) and the London School of Hygiene & Tropical Medicine (the School) in support of a planning application for a proposed development to the rear of the School building at 15-17 Tavistock Place, Camden, London.

1.2 The existing building at Tavistock Place, owned by the School, is an early twentieth century brick-faced building comprising four storeys plus a basement. It faces directly onto Tavistock Place, to which it has a highways frontage and from which it is accessed by vehicles and pedestrians. To the rear of the main building is a small courtyard area and towards the rear of the site is a single storey structure being a former depot.

1.3 The proposed development is part of a broader building and development programme that UCL is implementing within its extensive London estate. UCL and the School seek permission to demolish the single storey structure to the rear of the site and to develop this area to provide additional laboratory and office space. Once completed, the finished building will become the Bloomsbury Research Institute (BRI), a global centre of excellence.

1.4 The School building at 15 – 17 Tavistock Place lies within the King's Cross Ward of the London Borough of Camden, which is the local planning authority. Highway responsibilities within the area are split between Transport for London, which is responsible for the Transport for London Road Network, TLRN, and the London Borough of Camden, which is the local highway authority.

1.5 At a pre-application meeting with officers of the London Borough of Camden (LBC) on 3 February 2015 the highways development control engineer indicated that both a Transport Statement and a Travel Plan would be required in support of the planning application for the proposed development.

1.6 This Travel Plan has been prepared in accordance with and is complementary to the University College London Travel Plan published in February 2015 (the UCL Travel Plan).

1.7 UCL and the School recognise that their activities and operations can have an impact on society and the environment and are working to reduce the negative effects of these activities and operations whilst promoting and striving for positive outcomes where possible. Although travel is necessary to enable its work, study and research activities to function, UCL and the School are seeking to reduce the amount and impact of the travel that is undertaken.

1.8 The overall aim of the UCL Travel Plan is "…to enable efficient and optimal travel choices, which support UCL's business, minimise social and environmental impacts and respect and contribute to the local transport agenda and London's wider transport challenges amongst other things."

1.9 To achieve this, UCL is seeking to reduce the amount of travel which is undertaken, and encouraging a modal shift by promoting and increasing cycling, walking, and the use of 'sustainable' public transport.

1.10 Across its current development programme in the Bloomsbury area, UCL's strategy is to implement the UCL Green Travel Plan across its various sites, supported by brief site-specific daughter documents. The UCL Green Travel Plan therefore accompanies the present planning application and this document provides a site-specific interpretation and perspective on the plan for the proposed development at Tavistock Place.

2 Policies, Aims and Objectives

2.1 This Travel Plan, together with the UCL Travel Plan which it complements, has been prepared within a framework of national and local policies that support the principle of sustainable development.

2.2 The principle of sustainable development is at the heart of the National Planning Policy Framework. The framework sets out 12 core land-use planning principles, one of which is that:

Planning should actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling and focus significant development in locations which are or can be made sustainable.

The framework establishes a presumption in favour of sustainable development. Section 4 of NPPF provides the planning policy framework for promoting sustainable transport. Paragraph 32 requires that planning decisions about developments that generate significant numbers of trips should take account of the extent to which opportunities for sustainable transport modes have been taken up, safe access is provided for all people, and whether cost-effective improvements to the transport network can be undertaken to limit the impacts of the development. The National Planning Policy Framework states that development should only be prevented or refused where the residual cumulative impacts of development are severe. NPPF states that all developments which generate significant amounts of movement should be required to provide a Travel Plan.

2.3 The Travel Plan follows the recommendations outlined in the Transport for London (TfL) guidance 'Travel Planning for New Developments in London' and 'Travel Planning Guidance' 2013.

2.4 It also addresses the requirements of the London Plan (2015), as well as guidance identified in CTC document 'Cycle Friendly Design and Planning' and The London Plan cycle parking standards.

2.5 In addition and specifically to meet the planning requirements of the UCL Bloomsbury Masterplan, the document addresses the requirements of Camden Planning Guidance (CPG 7) – Transport, and Development Policy DP16 - The Transport Implications of Development.

2.6 The aims and objectives of this site specific Travel Plan are consistent with those set out in detail in the UCL Travel Plan and listed below:

The aims of this Travel Plan are to:

• Enable efficient and optimal travel and transport choices to be made;

• Improve sustainability and reduce our social and environmental impact from travel and transport;

• Improve staff and student health, well-being and work life balance;

• Enhance business resilience and contingency during periods of travel disruption

• Contribute to and influence the delivery of regional and local transport policies

These aims will be achieved through the following key objectives:

• Reducing the need to travel for work and study, where appropriate, through IT and flexible working arrangements;

• Enhancing travel mode choices for journeys, through the provision of appropriate information, infrastructure and support;

• Improving data capture, analysis and presentation to inform decision making;

• Working in partnership with our neighbours, borough councils, Transport for London, transport groups and other stakeholders to improve sustainable travel outcomes;

• Improving the logistics of managing day to day operations as well as construction projects and therefore contributing to a reduction in traffic, congestion and improved air quality

2.7 The Bloomsbury Research Institute will deliver these aims and objectives by supporting UCL campus-wide initiatives as outlined in the UCL Travel Plan and through a series of site-specific measures outlined in this document.

3 Site Location and Description

3.1 The site of the proposed development, known as 15 – 17 Tavistock Place, is located in the King's Cross Ward of the London Borough of Camden.

3.2 The subject site is located in the Bloomsbury area of Central London, within postcode area WC1.

3.3 The location of the site is shown in Figure 3.1 below.

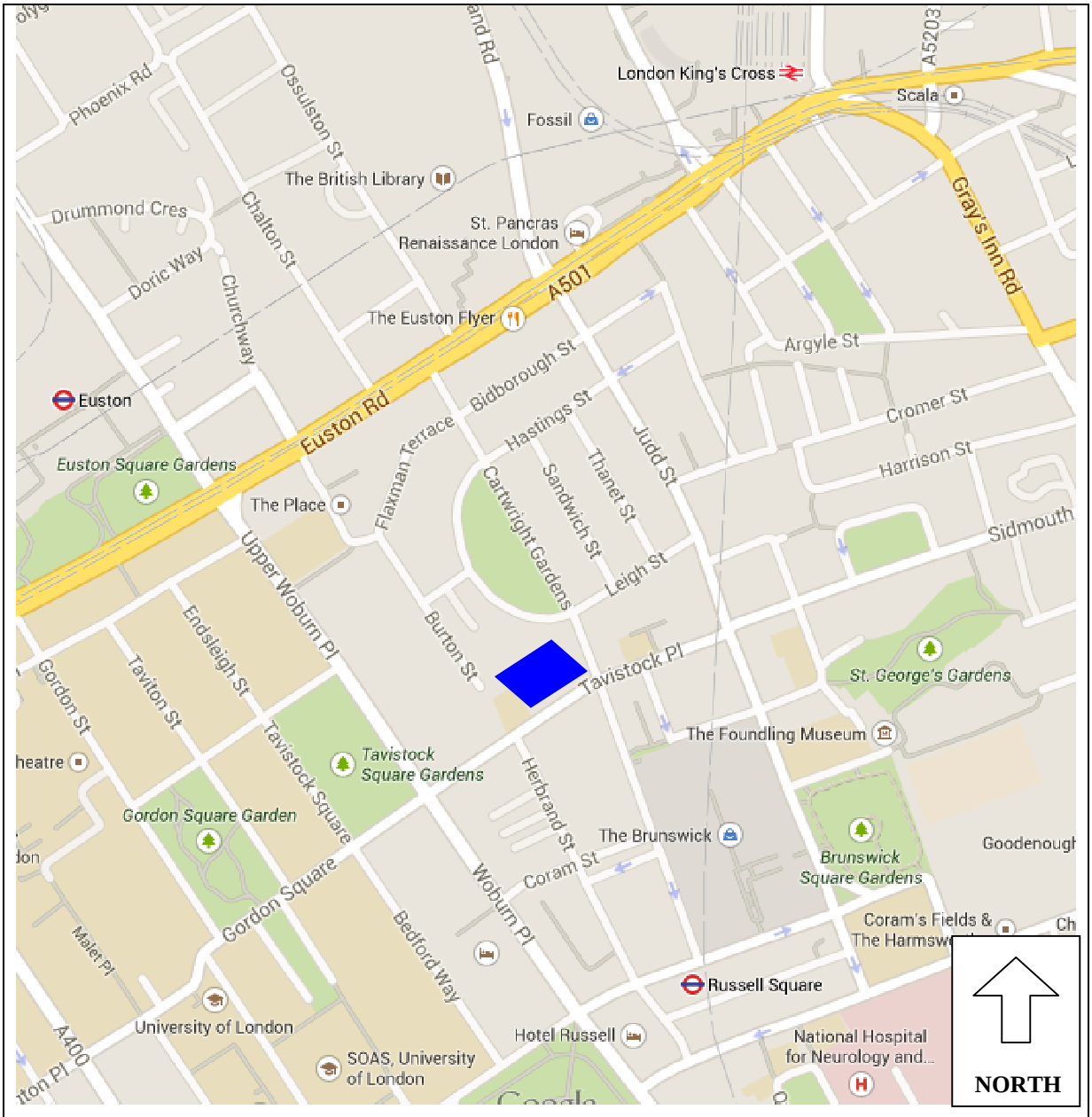


Figure 3.1 Location Plan

Location of Site

3.4 The site is located on the northern side of Tavistock Place, approximately 150m to the north east of Tavistock Square (the easterly side of which, Woburn Place, is designated as part of the A4200) and approximately 300m south of the Euston Road, A501.

3.5 Having an area of some 0.303 hectares, the site is broadly rectangular in shape, with a single highway frontage, to Tavistock Place, which runs along its southern boundary. The main building on the site, having four-storeys plus basement, is located on this southern boundary, for all practical purposes contiguous with the highway. The proposals envisage a development towards the rear of the site.

3.6 The existing main vehicular and pedestrian access to the site is from Tavistock Place. This is located towards the westerly end of the site frontage. Given the developed form of the site, the vehicular access passes through the principal building via a gated passageway that provides access to the internal courtyard. The main pedestrian entrance to the building is accessed from the covered passageway.

3.7 A short distance to the east of the site and separated from it by a largely retail frontage, is Marchmont Street, which runs in a generally north-south direction leading to the Euston Road to the north and to the B502 Bernard Street to the south.

3.8 Leading from the westerly side of Marchmont Street, South Crescent Mews passes through the developed frontage, to the side of the Lord John Russell public house. The cul-de-sac end of the mews provides a gated access to the School's Tavistock Place site, from which the School have a right of way for emergency evacuation only over South Crescent Mews.

3.9 The main building dates from the early twentieth century and is laid out in a 'U' shape, with the main elevation to Tavistock Place and with two rear wings, one on each side boundary. Towards the rear boundary of the site is a former depot structure, now D1 use.

3.10 The site is within the Bloomsbury Conservation Area. The building itself is not listed.

3.11 Figure 3.1 shows the location of the site relative to the local highway network and to London Underground and mainline rail stations. Euston Mainline Railway Station and Euston Underground Station are located approximately 590m to the north west of the application site, King's Cross Mainline Railway Station and King's Cross St Pancras Underground Station are located approximately 600m to the north east and Russell Square Underground Station around 280m to the south.

3.12 The application site is located within the heart of Bloomsbury, home of numerous cultural, educational and healthcare institutions, including the British Museum and Great Ormond Street Hospital. The area immediately surrounding the application site is characterised by residential accommodation, hotels, and commercial properties, the latter extending along Marchmont Street from Cartwright Gardens to the Brunswick Shopping Centre and Bernard Street. To the east of the School's building are the properties that front Marchmont Street which are generally four storeys in height, with retail and commercial activity at ground floor level and residential accommodation above. To the west of the site is a part three, part six storey residential mansion block which is divided from the application site by an access way. On the opposite side of Tavistock Place is a row of terrace properties of four storeys with basement accommodation. These buildings are predominantly in use as hotels. To the rear of the site there are residential properties, especially on Burton Street, and hotel accommodation on Cartwright Gardens.

4 The Existing and Permitted Use of the Site

4.1 In May 2009, planning permission was granted for a change of use and works of conversion of 15 – 17 Tavistock Place from offices (Use Class B1) to flexible business/non-residential institution floorspace (Use Class B1/D1). Planning permission 2009/0067/P refers.

4.2 The planning approval, since implemented, included the construction of a four-storey rear extension to the principal building to provide circulation space between the floors of the existing building, including new internal and external stairs and lift access.

4.3 The purpose of the implemented planning approval was to adapt the building to enable its use by the London School of Hygiene & Tropical Medicine. The building now accommodates a combination of educational facilities, research programmes and administrative offices.

5 PTAL Assessment

5.1 PTAL (Public Transport Accessibility Level) is a measure of the accessibility of a site to public transport services. It is based on an assessment of walking distance from the site to nearby public transport access points (bus stops and railway stations) within 640m for bus services and 960m for rail, and the average waiting time in the morning peak hour (derived from the frequency of service). It results in a score of between 1 and 6, with 1 representing poor accessibility to public transport and 6 indicating excellent accessibility.

5.2 A PTAL calculation has been undertaken for 15 – 17 Tavistock Place using Transport for London's on-line PTAL calculator[1]. **This resulted in a PTAL score of 6b**, the highest score achievable, indicating an excellent level of accessibility to public transport services. The report generated by the calculator is presented at Appendix A to this report.

5.3 The following paragraphs show that the site benefits from convenient access to local bus and underground services, and to regional and national rail services, offering good opportunities for those studying and working at and visiting the site to travel by public transport rather than by private car.

6 Site Accessibility – Bus Services

6.1 Figure 6.1 below shows the location of the nearest bus stops that are within a convenient walking distance of the application premises. All of the stops shown are within the 640m walking distance (8 minute walking time) used by Transport for London as the basis of their PTAL calculation. The two nearest stops, on Tavistock Square, are within approximately 210m and 310m from the application site, accessible within a walking time of approximately 2 to 3 minutes respectively. The bus stops indicated on Euston Road, near to the British Library, are within approximately 300m to 500m of the site, accessible on foot in around 4.5 – 6 minutes respectively. Euston Station Bus Station and bus stops at Russell Square and on Woburn Place and Gray's Inn Road are all within the 8-minute maximum walking time used in the PTAL assessment.

[1] www.webptals.org.uk Transport for London Planning Information Database

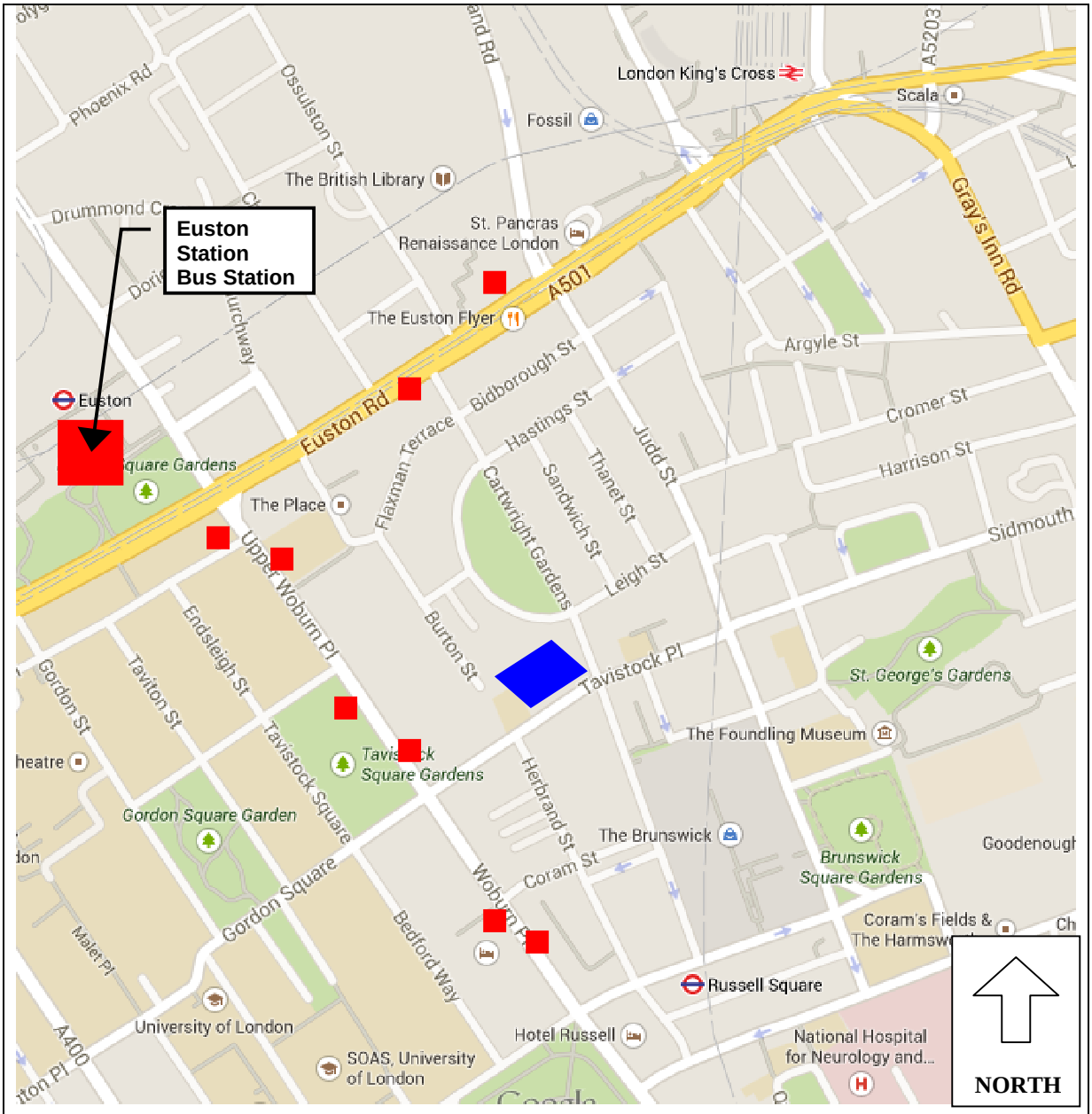


Figure 6.1 Location Plan

Location of Nearby Bus Stops

Location of Site

6.2 The nearest, Tavistock Square, stops afford access to the bus services detailed in the table below.

Service No.	Service Route	Frequency/Operating Hours					
		Monday- Friday		Saturday		Sunday	
		Day	Eve	Day	Eve	Day	Eve
59	King's Cross – Streatham Hill (Telford Avenue	9-15 bph	4-6 bph	7-12 bph	4-5 bph	4-6 bph	4-6 bph
		0405 - 0010		0405 - 0010		0435 - 0010	
68	Euston Bus Station – West Norwood Station	7-12 bph	5-7 bph	6-10 bph	5bph	4-5 bph	4-5 bph
		0521 - 0037		0521 - 0037		0521 - 0037	
91	Trafalgar Sq – Crouch End (Rosebery Gardens)	6-10 bph	6-10 bph	6-9 bph	6-9 bph	5-7 bph	5-7 bph
		0505- 0015		0505- 0015		0605- 0015	
168	Dunton Road – Hampstead Heath (South End Green)	7-12 bph	6-7 bph	6-10 bph	6-10 bph	5-7 bph	5-7 bph
		0500 - 0025		0500 - 0025		0500 - 0025	

Table 6.1 Summary of Daytime and Evening Timetable Details for Local Bus Services Accessible From Bus Stops Nearest to 15-17 Tavistock Place

bph = buses per hour in each direction Times of first and last bus are approximate

6.3 The Euston Road bus stops afford access to the bus services detailed in Table 6.2 below.

6.4 Additionally, the stops on Gray's Inn Road to the east of the site provide access to services 17, 45 and 46, which operate respectively between London Bridge and Archway Station, St Pancras and New Park Road and Lancaster Gate Station and St Bartholomew's Hospital (via Hampstead).

6.5 All of these services operate throughout the daytime and evening on all days of the week. Service 17 operates with a frequency of every 7-10 minutes on Mondays to Fridays, 10 minutes on Saturdays and 15 minutes on Sundays. Service 45 operates with a frequency of every 7-9 minutes in the daytime and every 15 minutes in the evening on Mondays to Fridays, every 6-10 minutes in the daytime and every 15 minutes in the evening on Saturdays and every 15 minutes throughout the day on Sundays. Service 46 operates with a frequency of every 8-12 minutes in the daytime and every 15 minutes in the evening on Mondays to Fridays, every 8-10 minutes in

the daytime and every 15 minutes in the evening on Saturdays and every 15 minutes throughout the day on Sundays.

Service No.	Service Route	Frequency/Operating Hours					
		Monday- Friday		Saturday		Sunday	
		Day	Eve	Day	Eve	Day	Eve
10	**King's Cross-Hammersmith**	6-8 bph	5 bph	5-7 bph	5-7 bph	5 bph	5 bph
		24 hours		24 hours		24 hours	
30	**Marble Arch – Hackney Wick**	6-8 bph	5 bph	5-7 bph	5-7 bph	4-5 bph	4-5 bph
		0443 - 0105		0443 - 0105		0443 - 0105	
59	**King's Cross – Streatham Hill (Telford Avenue**	9-15 bph	4-6 bph	7-12 bph	4-5 bph	4-6 bph	4-6 bph
		0405 - 0010		0405 - 0010		0435 - 0010	
73	**Victoria Bus Station – Stoke Newington**	8-20 bph	8-20 bph	10-15 bph	10-15 bph	7-12 bph	7-12 bph
		0510 - 0111		0510 - 0105		0510 - 0111	
91	**Trafalgar Sq – Crouch End (Rosebery Gardens)**	6-10 bph	6-10 bph	6-9 bph	6-9 bph	5-7 bph	5-7 bph
		0505- 0015		0505- 0015		0605- 0015	
205	**Bow Church – Paddington (Cleveland Terrace)**	6-10 bph	5 bph	6-10 bph	5-6 bph	4-6 bph	4-6 bph
		0455 - 0030		0455 - 0030		0500 - 0030	
390	**Archway Station – Notting Hill Gate**	2 bph	-	2 bph	-	2 bph	-
		0002 - 0555		0002 - 0555		0002 - 0600	
476	**Euston Bus Station – Northumber-land Park**	7-10 bph	5-6 bph	7-8 bph	5-6 bph	5 bph	5 bph
		0525 - 0005		0525 - 0005		0525 - 0005	

Table 6.2 Summary of Daytime and Evening Timetable Details for Local Bus Services Accessible From Bus Stops on Euston Road Nearest to 15-17 Tavistock Place

bph = buses per hour in each direction Times of first and last bus are approximate

6.6 Euston Station Bus Station is within a 7 – 8 minute walk of the site. The bus station provides access to further services as shown in the Bus Station map included at Appendix B to this report.

6.7 From the map it will be seen that a wide range of destinations can be reached from the Euston Station Bus Station throughout the day. Destinations served include Wembley, Harlesden, Camden Town, Hampstead Heath, Archway, Tottenham, Hackney, Islington, Bow, Elephant and Castle, Brixton, Streatham Hill, Hammersmith, Kensington, Paddington and Notting Hill Gate as well as the City and the West End.

6.8 The above text and tables show that from stops within close proximity of 15 – 17 Tavistock Place a large number of services operate at high frequencies throughout the daytime and evening to a broad range of destinations across London, including to the south of the river. All of the routes serving these destinations operate on all days of the week, throughout the likely opening hours of the School buildings.

6.9 The above demonstrates that the application site is exceptionally well served by local bus services, as the excellent PTAL score would suggest. Local bus services therefore offer an excellent alternative to the private car for students, employees or visitors wishing to travel to and from the application site.

6.10 Continuing improvements to local bus stops, including the provision of passenger shelters, site-specific timetable information, route maps and real time passenger information including Countdown information, will enhance the passenger waiting experience, whilst on-bus facilities such as CCTV (now fitted to all London buses) will make passengers feel safer. Strict bus lane enforcement is one factor in ensuring greater service reliability, which is likely to promote greater confidence in bus services. Introduction of the Oyster Card, a ‘’pay-as-you-go” re-usable smart card, has made bus travel faster, easier and cheaper than paying by cash in the conventional way. All of these factors help to make bus travel more attractive and an increasingly realistic alternative to the use of the private car.

6.11 The Countdown Live bus arrivals system is just one measure that has been introduced by Transport for London to promote greater bus patronage in the area. Each bus stop offers a mobile telephone text message service allowing intending passengers to receive details of the next bus to arrive at that stop on their mobile telephone by sending the bus stop code as a text message to TfL. The information can also be accessed on line.

7 Site Accessibility – Rail Services

7.1 The acceptable walking time for access to rail services used by TfL in its PTAL calculation is 12 minutes, a distance of 960m.

7.2 Five Underground stations and three mainline railway stations meet these criteria.

7.3 The nearest Underground station is Russell Square, accessible within a walking time of around 4 minutes from the application site. Russell Square provides access to London Underground services on the Piccadilly Line, operating between Heathrow and Cockfosters via Hounslow, Acton, Hammersmith, Central London, King's Cross and Finsbury Park. There are numerous connections to other London Underground lines, including the Victoria Line linking to Brixton in the south and Walthamstow in the north east. Trains operate to and from Russell Square to a high frequency between approximately 6am and 1am on Mondays to Saturdays and 7am and 1am on Sundays. The journey time between Russell Square and Heathrow is 54 minutes and between Russell Square and Cockfosters is 34 minutes. All of the stations on the Piccadilly Line are therefore within acceptable commuting time of the application site, offering a convenient alternative to the private car.

7.4 King's Cross St Pancras is a ten-minute walk from the application site and offers access to London Underground services on the Piccadilly Line, Victoria Line, Northern Line, Hammersmith and City Line, Circle Line and Metropolitan Line. Northern Line trains operate between High Barnet or Edgware to the north and Morden to the south. The Metropolitan Line provides links to the north west of London, including Watford, Amersham and Uxbridge whilst the Hammersmith and City Line provides an east-west connection between Barking in the east and Hammersmith in the west. Via the Metropolitan Line, Watford is accessible in approximately 50 minutes from King's Cross, Amersham in 59 minutes and Uxbridge in 48 minutes. Northern Line services provide access from King's Cross to High Barnet in 30 minutes, Edgware in 28 minutes and Morden in 38 minutes. The Hammersmith and City Line offers a travel time of 26 minutes from King's Cross to Hammersmith and 34 minutes to Barking. All of these destinations, and intermediate stations, are within acceptable commuting times of the application site.

7.5 Euston Underground Station is accessible within a 9-minute walking time of the site and provides access to Northern Line and Victoria Line services, Goodge Street (an approximate 11½-minute walk) to the Northern Line and Euston Square Underground Station (a similar 11½-minute walk) to Metropolitan, Circle and Hammersmith and City Lines.

7.6 All of the above London Underground lines provide high frequency services on all days of the week throughout the day and evening.

7.7 The three mainline railway stations readily accessible on foot from the application site are King's Cross, St Pancras and Euston. King's Cross provides the London terminal of the East Coast mainline and services to destinations such as Cambridge and Peterborough. Euston provides the London terminal of the West Coast mainline, London Midland services to destinations such as Watford and Milton Keynes and London Overground services to Wembley and Watford Junction. St Pancras provides a terminal for domestic services linking to Luton Airport, Bedford and the Midlands. National rail services therefore provide regional connections to the site serving a range of destinations to the north of London that are within acceptable commuting time.

7.8 The London Overground service between London Euston and Watford Junction, provides access to destinations in north west London, including South Hampstead, Willesden, Harlesden, Wembley, Kenton, Harrow and Wealdstone, Hatch End, Carpenders Park and Bushey. The service operates on all days of the week, providing journey times of 7 minutes to South Hampstead, 14 minutes to Willesden, 16 minutes to Harlesden, 19 minutes to Wembley Central, 27 minutes to Kenton, 29 minutes to Harrow and Wealdstone, 34 minutes to Hatch End, 37 minutes to Carpenders Park, 40 minutes to Bushey and 47 minutes to Watford Junction, all within an acceptable commuting time of 15 – 17 Tavistock Place. Trains operate between 0537 and 0044 northbound and 0511 and 0012 southbound on Mondays to Saturdays and 0647 and 0035 northbound and 0651 and 0010 southbound on Sundays with generally 2 or 3 trains per hour in the daytime and evenings.

7.9 Rail services therefore provide frequent connections within acceptable commuting times between the application site at 15 – 17 Tavistock Place and a broad range of

destinations throughout the opening hours of the development, providing an efficient and practical alternative to the use of the private car.

8 Site Accessibility – Walking and Cycling

8.1 The Government's former guidance to local planning authorities on the transport aspects of planning policy, PPG13[2], sought to achieve an integration between planning and transport at all levels so that the need to travel, (especially by car), is reduced, more sustainable transport choices are encouraged and accessibility to jobs, leisure facilities, services and shopping by public transport, by cycle and on foot is promoted.

8.2 PPG13 stated that walking is the most important mode of travel at the local level, offering the greatest potential to replace short car trips of up to 2km. The Chartered Institution of Highways and Transportation (CIHT) suggests walking to be a 'desirable' mode for journeys up to 400m and 'acceptable' for journeys up to 800m with a preferred maximum of 1200m.

8.3 Not only is walking important as a mode of travel in itself, it also generally forms the start and end of every journey type. Walking is obviously an important part of public transport journeys and the quality and convenience of the walking environment could be a crucial element in mode choice decisions. For those travelling further distances it is important that local public transport facilities, such as bus stops, are readily accessible on foot if trips by private car to and from these more remote locations are to be discouraged. As already described, public transport facilities, including bus stops, five London Underground stations and three mainline railways stations are within 960m of the site and are therefore within acceptable walking distance, offering connections to many parts of London and beyond.

8.4 The walking environment in the vicinity of the site is good, with all roads having footways of an appropriate standard and reasonable quality, and with street lighting to aid personal security and promote road safety. To assist pedestrians to safely cross the roads in the vicinity of the site, there are signalised pedestrian crossing facilities at the traffic signal controlled junctions of Tavistock Place with Woburn

[2] Planning Policy Guidance Note 13 – Transport: Department for Communities and Local Government, January 2011. Replaced by National Planning Policy Framework March 2012

Place/Upper Woburn Place and with Marchmont Street, with similar facilities at traffic signal-controlled junctions further afield. At these junctions and at other, uncontrolled junction crossing points, there is good provision of dropped crossings and tactile paving to assist pedestrians, especially those with mobility impairment.

8.5 The application site lies within the heart of Bloomsbury, within convenient walking distance of a range of educational, cultural, leisure, residential and shopping facilities. The main UCL buildings are located an approximate 800m walking distance to the west of the application site, the British Library on Euston Road, a walking distance of around 500m to the north, and the British Museum is within a one-kilometre walking distance to the south.

8.6 There are extensive shopping and leisure facilities within the immediate vicinity of the School building, allowing a number of trips for a variety of purposes (shopping, banking, fitness and leisure trips for example) to be undertaken on foot during break periods.

8.7 On Marchmont Street, north of Tavistock Place, a short walk of under 1 minute, there is a public house, café, laundrette, betting shop, book shop, dentist and supermarket, together providing a range of goods and services. To the south of Tavistock Place, Marchmont Street offers a further range of commercial outlets, including further cafes and food outlets, a computer shop, dry cleaner, newsagent and post office. A short distance to the south is The Brunswick, a purpose built pedestrianised district shopping centre that provides a broad range of retail outlets and service providers, including a Waitrose supermarket, Halifax building society and Boots the Chemist, in addition to restaurants, food outlets, card shop, clothes shops, opticians, mobile phone shops, betting shop and an NHS medical centre. A health club is located on Woburn Place within a walking distance of approximately 160m of the School building.

8.8 Figure 8.1 below shows the area in the immediate vicinity of the School site and the various facilities that are readily accessible on foot. The approximate distances and walking times to a number of these shops and services are presented in Table 8.1 below.

8.9 It is clear, therefore, that should planning permission be granted, students, staff and visitors to the BRI development would be able to choose to walk to and from the application premises for a variety of trip purposes.

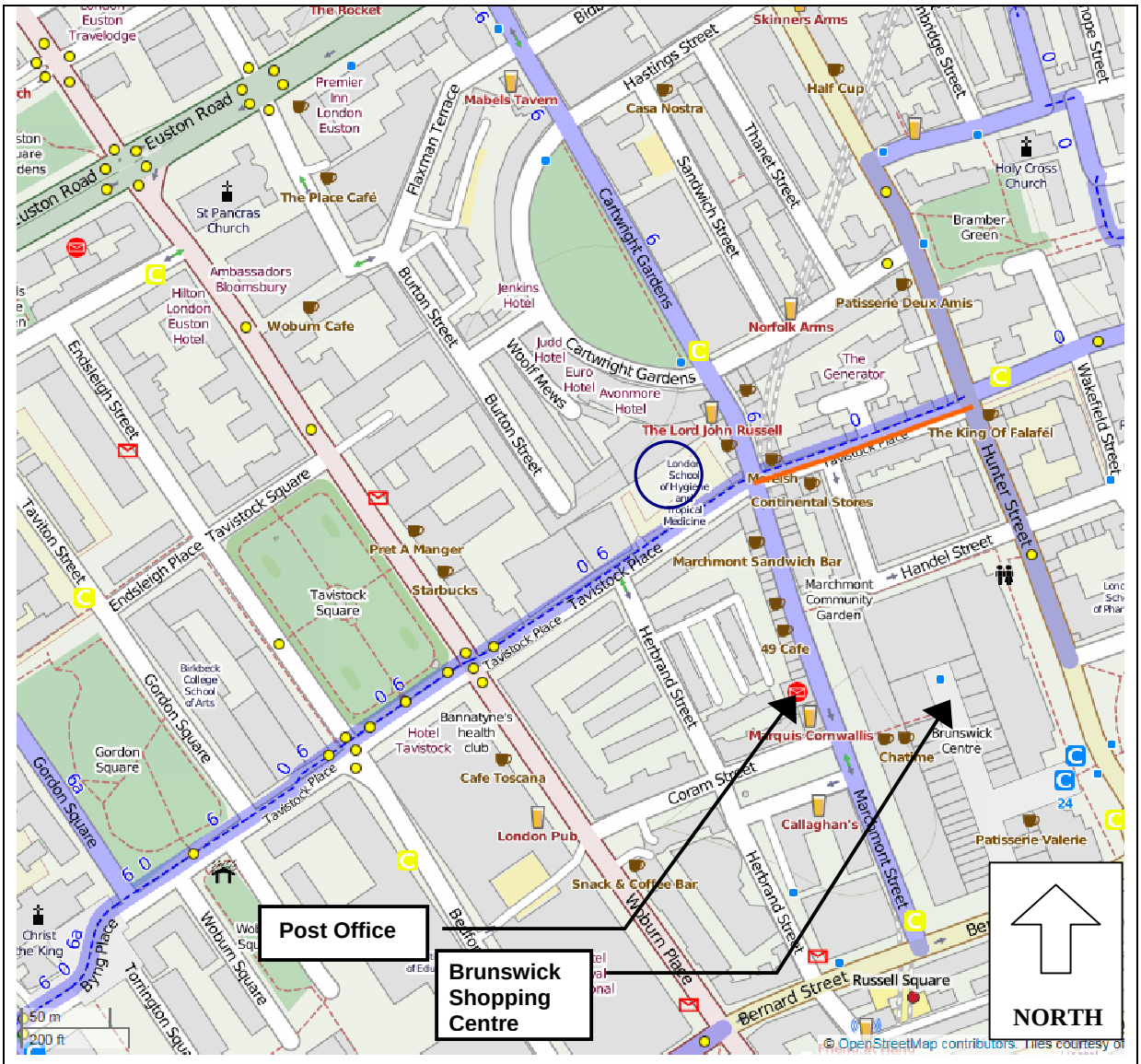


Figure 8.1 Facilities and Cycle Routes in the Vicinity of the Site

Location of Site

© OpenStreetMap

8.10 PPG13 also stated that cycling has the potential to replace car trips of, in particular, 5km or less in length. Clearly, all the local shopping, service and leisure amenities

that are within a short and convenient walking distance of the site are also readily accessible by cycle, but far more extensive residential areas lie within 5km of the site, making the School readily accessible by bicycle to those commuting to the application site.

Facility	Approximate Distance from site (m)	Approximate Walking Time (mins', secs")
Marchmont Street shops (north of Tavistock Place)	70	1
Marchmont Street shops (south of Tavistock Place)	80	1
Health Club Woburn Place	160	2
Marchmont Street Post Office	160	2
Tavistock Square Bus Stop (southbound)	211	2' 40"
Tavistock Square Bus Stop (northbound)	320	4'
Brunswick Shopping Centre	320	4'
Russell Square Underground Station	329	4' 10"
Euston Road Bus Stop (westbound)	350	4' 30"
Euston Station Bus Station	640	8'
Euston Railway Station	692	8' 40"
UCL Chadwick Building	965	12'

Table 8.1 Approximate Walking Distances and Associated Walking Times to Public Transport Facilities, Shops and Services within the Immediate Vicinity of 15-17 Tavistock Place

8.11 Facilitating access to the site by bicycle, the School building lies at the intersection of two designated local cycle routes, 0 and 6. The alignments of these cycle routes are shown in pale blue on Figure 8.1 above.

8.12 These two designated routes share facilities along Tavistock Place, passing the frontage of the building. At present a two-way dedicated cycle facility runs along the northerly side of Tavistock Place, segregated from general traffic by a series of raised, kerbed and paved islands. These latter provide a largely continuous division of the cycle lanes from the main carriageway, interrupted only to provide level crossing points for pedestrians and to afford vehicular access to off-street parking and loading areas. There is a break in the island at the existing vehicular access points to the subject site from Tavistock Place. The darker, dashed line, on Figure 8.1 shows the extent of the segregated facility, extending from Goodge Street in the west to Judd Street in the east.

8.13 Route 0 extends from Marble Arch to the west to Finsbury (1 mile) and the City (2½ miles) in the east and on to Elephant and Castle, with a spur to Kings Cross St Pancras Station and another to Old Street. Route 6 provides a north-south route, starting near to Waterloo, south of the river and running via Covent Garden and the British Museum to Tavistock Place, then turning northwards via Marchmont Street and Cartwright Gardens and extending to Camden Town (1½ miles) and to the vicinity of Caledonian Park. The two routes connect with a network of other cycle routes serving the area, facilitating and promoting access to the site by bicycle.

8.14 The Tavistock Place cycle route is one of the busiest in Camden. Cycling is already a popular means of getting around this part of London and would provide an attractive means of travel to and from the application site.

9 The Local Highway Network

9.1 Tavistock Place in the vicinity of the subject site is a single carriageway, currently two-way urban street with footways to both sides. At this location the development within the street is predominantly residential in character, some premises providing hotel accommodation.

9.2 The carriageway of Tavistock Place at this point presently provides a single traffic lane in each direction. As described in paragraph 8.12 above, at the present time a

two-way cycle lane, segregated from the main carriageway, is located on the northerly side of Tavistock Place, adjacent to the frontage of the application site.

9.3 The junction of Tavistock Place with Marchmont Street is controlled by traffic signals. Both the left turn and right turn for general traffic from Tavistock Place into the northerly arm of Marchmont Street are prohibited at this junction, whilst Marchmont Street to the south of the Tavistock Place junction is one-way in a southwards direction, leading away from the junction.

9.4 Effectively, therefore, within the immediate vicinity of its junction with Tavistock Place, Marchmont Street to the north of the junction is one-way southbound for motor vehicles, with only pedal cyclists allowed to turn into Marchmont Street to proceed in a northerly direction. Nevertheless, this single carriageway road is marked with a single traffic lane southbound, approaching the signals, with a full-width northbound lane preserved.

9.5 The Marchmont Street frontages within the vicinity of the subject site are largely retail and commercial in character and are likely, therefore, to generate a requirement for on-street loading and servicing activity. Footways are present on each side of the street.

9.6 It is understood that, in the summer of 2015, for a period of nine months initially, LBC propose to introduce an experimental traffic regulation order, the effect of which will be to make Tavistock Place one-way eastbound for motor vehicles, from Gower Street to Judd Street. A cycle lane will be provided down both sides of the carriageway, allowing two-way cycle movements to be retained. During the experimental period no physical works are planned. The changes will therefore be in place before the present application is determined. Consequently, the changes have been anticipated and are taken into account both in relation to the access arrangements for construction vehicles and in relation to access for delivery and servicing vehicles once the building is completed. In terms of this Travel Plan, the proposed changes do not have a significant or detrimental bearing on access to the site by sustainable transport modes.

9.7 The application site lies within a Controlled Parking Zone (CPZ). The King's Cross CPZ extends from Euston Road in the north to Holborn/High Holborn in the south

and from Woburn Place/Southampton Row in the west to the easterly side of Gray's Inn Road. Within the CPZ the standard waiting restrictions are No Waiting Monday – Friday, 0830 – 1830 and Saturday, 0830 – 1330. These restrictions, identified by single yellow lines, are in force on both sides of Marchmont Street to the easterly side of the application site. More restrictive waiting restrictions are in force on Tavistock Place to the frontage of the application site, with double yellow waiting restriction lines in evidence on both sides of the road, indicating No Waiting At Any Time.

9.8 Residents' permit parking is in operation within the CPZ, allowing residents' vehicles to be parked in marked bays during the operative hours. This applies to both sides of Burton Street, for example, to the north west of the application site. Residents can apply for visitor permits. Business permits are available within the CPZ for commercial vehicles for which on-street parking is required for the operational needs of the business concerned (i.e. not to accommodate commuter parking). Business permits would not be granted in circumstances where public transport offers a reasonable alternative. On-street parking for non-residents' vehicles is therefore closely controlled and largely restricted. This serves to provide a disincentive to travel to and from the application site by private motorcar and encourages sustainable travel.

9.9 A borough-wide 20mph speed limit order applies to all roads that are managed by LBC, including Tavistock Place and other roads in the immediate vicinity of the application site. The restriction excludes the majority of the Transport for London Road Network (TLRN).

10 Travel Characteristics of the Existing Site

10.1 As indicated above, University College London (UCL) and the London School of Hygiene & Tropical Medicine (the School) propose to develop the existing School building at 15 – 17 Tavistock Place to provide additional laboratory and office space, forming the Bloomsbury Research Institute (BRI). The existing School building is currently in similar use and the travel characteristics of the existing site will therefore provide a reliable indication of the travel characteristics of the proposed BRI development once complete and in operation.

10.2 In order to determine the existing pattern of trips to and from the present site, a multi-modal survey was commissioned and was undertaken on Tuesday, 21 April 2015 by an independent survey company. This date was selected because it was during term time and was regarded as a 'typical' day as advised by the School.

10.3 The survey consisted of two elements. Firstly, a count of all arrivals and departures at the site entrance was undertaken, recorded in fifteen-minute intervals between the hours of 0800 and 1800. The School advised that the opening hours of the building for the majority of staff, students and visitors are 0900 – 1700. The School confirmed that only the single entrance to the School building at Tavistock Place, located under the arch furthest from Cartwright Gardens, is in use for normal arrivals/departures of people. The numbers of people entering and leaving the building during the survey period are presented in Table 10.1 below.

10.4 From Table 10.1 below it will be seen that over the ten-hour survey period between 0800 and 1800, a total of 464 people arrived at 15 – 17 Tavistock Place and a total of 396 departed from the site. A total of 860 people trips equates to 1.43 arrivals or departures per minute on average. As arrivals exceed departures over the survey period there are clearly some trips that took place outside the survey times of 0800 to 1800, however these trips are considered unlikely to have a significant impact on the transport system due to the lower level of activity generally on the network at these other times.

10.5 It will also be noted that the peak periods for arrivals and departures at the site do not coincide with the traditional peak hours of 0800-0900 and 1700-1800. Between 0800 and 0900 only 43 person trips were generated, 35 arriving and 8 departing, fewer than one per minute on average. Between 1700 and 1800 a higher number of trips was recorded, with 88 people arriving or departing, 19 arriving at and 69 leaving the site.

10.6 The peak period for trips associated with the existing School building occurred between 1200 and 1400. This is perhaps not surprising, as this period would coincide with lunch breaks when people might reasonably be expected to make short trips into the surrounding neighbourhood for a variety of trip purposes and with the end of morning and commencement of afternoon study/work periods. The highest number of trips, 126, was recorded between 1200 and 1300 (65 arriving and 61 departing) with

a slightly lower number, 121, between 1300 and 1400 (66 arriving and 55 departing), in each case representing in broad terms one arrival and one departure per minute on average, which is not considered to be a high flow.

10.7 Outside of these peak hours, the highest number of hourly trips recorded was 103 (81 arriving and 22 departing) between 1000 and 1100. 81 was the highest number of arrivals recorded in any of the ten surveyed hours. 69 was the highest number of departures per hour, between 1700 and 1800.

10.8 The second element of the survey was to record mode of travel. This was achieved by direct interview with people arriving at the building. As many interviews as possible were recorded. As this type of survey relies on the co-operation of those being interviewed, the survey was confined to simple questions about mode of travel and where people were making their second or subsequent entry to the building, and identified themselves to the interviewers as such, they were not asked further questions. It is considered reasonable to assume that most peoples' first interview would relate to their 'commuting trip', rather than, say, to a lunchtime trip within the local neighbourhood or short trip between buildings, and is therefore more likely to lead to an over-estimate of trips by car or public transport and an under-estimate of trips on foot for example. Of the 464 people entering the site during the survey period only 13, 2.8%, were recorded as 'missed or refused to answer'. A good sample size of interviews was therefore achieved and the results are considered to be representative of travel patterns to the site.

TIME (start)	IN			OUT			TOTAL		
	Arrive (1/4 hr)	Time (Hour)	Arrive (Hour)	Depart (1/4 hr)	Time (Hour)	Depart (Hour)	Total (1/4 hr)	Time (Hour)	Depart (Hour)
0800	6	**0800 - 0900**	**35**	2	**0800 - 0900**	**8**	8	**0800 - 0900**	**43**
0815	6			1			7		
0830	10			5			15		
0845	13			0			13		
0900	10	**0900 - 1000**	**71**	1	**0900 - 1000**	**11**	11	**0900 - 1000**	**82**
0915	21			1			22		
0930	16			3			19		
0945	24			6			30		
1000	29	**1000 - 1100**	**81**	5	**1000 - 1100**	**22**	34	**1000 - 1100**	**103**
1015	21			6			27		
1030	19			4			23		
1045	12			7			19		
1100	10	**1100 - 1200**	**42**	2	**1100 - 1200**	**27**	12	**1100 - 1200**	**69**
1115	6			3			9		
1130	8			8			16		
1145	18			14			32		
1200	8	**1200 - 1300**	**65**	13	**1200 - 1300**	**61**	21	**1200 - 1300**	**126**
1215	16			12			28		
1230	20			14			34		
1245	21			22			43		
1300	16	**1300 - 1400**	**66**	16	**1300 - 1400**	**55**	32	**1300 - 1400**	**121**
1315	12			10			22		
1330	19			9			28		
1345	19			20			39		
1400	13	**1400 - 1500**	**38**	20	**1400 - 1500**	**48**	33	**1400 - 1500**	**86**
1415	9			7			16		
1430	6			8			14		
1445	10			13			23		
1500	13	**1500 - 1600**	**27**	10	**1500 - 1600**	**44**	23	**1500 - 1600**	**71**
1515	4			8			12		
1530	9			17			26		
1545	1			9			10		
1600	4	**1600 - 1700**	**20**	10	**1600 - 1700**	**51**	14	**1600 - 1700**	**71**
1615	7			13			20		
1630	5			18			23		
1645	4			10			14		
1700	7	**1700 - 1800**	**19**	18	**1700 - 1800**	**69**	25	**1700 - 1800**	**88**
1715	5			15			20		
1730	4			22			26		
1745	3			14			17		
TOTAL	**464**			**396**			**860**		

Table 10.1 Results of Multi-Modal Survey of Arrivals and Departures at 15 – 17 Tavistock Place on Tuesday 21 April 2015 (Part 1 – Numbers of Trips)

10.9 With regards to the method of travel of those people interviewed, enumerators were asked to establish from interview and record the following trip types:

- Cycle
- Walk
- Walk and Private Car
- Walk and taxi
- Walk and bus
- Walk and train
- Walk and tube
- Walk and motorcycle
- Cycle and rail

10.10 Only the main secondary mode, by distance, was to be recorded.

10.11 The resulting modal split of trips to the site over the course of the ten-hour study period is presented in Table 10.2 below.

Mode of Travel (including main secondary mode by distance travelled)	Mode Share (%) All Hours
Walk all the way	32.5%
Walk and Tube	28.4%
Walk and Train	15.5%
Cycle all the way	12.2%
Walk and Bus	7.7%
Walk and Taxi	1.8%
Cycle and Rail	1.5%
Walk and Motorcycle	0.4%
Walk and Motor Car	0.0%
TOTAL	**100%**

Table 10.2 Results of Multi-Modal Survey of Arrivals and Departures at 15 – 17 Tavistock Place on Tuesday 21 April 2015 (Part 2 – Modal Share of Trips)

10.12 From Table 10.2 above it will be seen that no-one arriving at the School during the survey hours travelled by private car, and only 0.4% by motorcycle, with 1.8% arriving by taxi. Almost a third of those travelling to the site did so on foot for the whole of the journey (32.5%) and 12.2% travelled all the way by bicycle.

10.13 Over half of journeys (53.1%) involved a trip by public transport, with 51.6% completing their journey on foot having travelling by tube (28.4%), train (15.5%) and bus (7.7%), and with 1.5% completing their rail journey by bicycle.

10.14 Overall during the survey period, 44.7% travelled wholly by non-motorised means (32.5% walking and 12.2% cycling), whilst 53.1% of trips involved public transport. In total 97.8% of trips were made by sustainable modes of transport.

10.15 If the morning peak period, from 0800-1000, is considered, the effects of non-interviewed second entrances are minimised, with only two people falling into this category and with only 4 people (3.77%) recorded as 'missed or refused to answer'. The modal split of those arriving during this period is presented in Table 10.3 below.

10.16 From Table 10.3 it will be seen that in the period between 0800 and 1000, over half of arrivals (56%) travelled by rail, completing their journeys on foot, (38% by tube and 18% by train) with a further 3% travelling by rail and completing the journey by cycle. 18% of arrivals cycled all the way, higher than for the day as a whole, whilst walking all the way was lower in the 0800-1000 period (12%) compared with the day as a whole (32.5%). Bus journeys accounted for a higher proportion of trips between 0800 and 1000 compared with the day as a whole (10% and 7.7% respectively). Nevertheless, 30% travelled wholly by non-motorised means (12% walking and 18% cycling), whilst 69% of trips involved public transport. In total 99% of trips were made by sustainable modes of transport. No journeys were made by private car and only 1% of trips were made by motorcycle.

Mode of Travel (including main secondary mode by distance travelled)	Mode Share (%) 0800 - 1000
Walk and Tube	38%
Cycle all the way	18%
Walk and Train	18%
Walk all the way	12%
Walk and Bus	10%
Cycle and Rail	3%
Walk and Motorcycle	1%
Walk and Taxi	0%
Walk and Motor Car	0%
TOTAL	**100%**

Table 10.3 Results of Multi-Modal Survey of Arrivals and Departures at 15 – 17 Tavistock Place on Tuesday 21 April 2015 (Part 2 – Modal Share of Trips) (0800 – 1000)

10.17 Applying the above modal split to the overall number of arrivals surveyed provides an indication of the number of people arriving at the School by mode of travel. This information is presented in Table 10.4 below.

10.18 Table 10.4 indicates that in the morning peak period between 0800 and 1000, of the 106 people arriving at the School, 32 would either have cycled or walked for the whole of their journey, 62 would have travelled by rail, completing their journey on foot or by bicycle, and 11 would have travelled by bus. Only one person travelled by a motor vehicle, in this case a motorcycle. For the whole of the survey period, 0800 – 1800, of the 464 people arriving at the School, 208 would either have cycled or walked for the whole of their journey, 211 would have travelled by rail, completing their journey on foot or by bicycle, and 36 would have travelled by bus. Ten journeys were made by motor vehicle, including 8 by taxi.

Mode of Travel (including main secondary mode by distance travelled)	Mode Share (%) 0800 - 1000	Arrivals by Mode 0800 - 1000		Mode Share (%) 0800 - 1800	Arrivals by Mode 0800 - 1800	
Walk all the way	12%	13	**32**	32.5%	151	**208**
Cycle all the way	18%	19		12.2%	57	
Walk and Tube	38%	40	**62**	28.4%	132	**211**
Walk and Train	18%	19		15.5%	72	
Cycle and Rail	3%	3		1.5%	7	
Walk and Bus	10%	11	**11**	7.7%	36	**36**
Walk and Motorcycle	1%	1	**1**	0.4%	2	**10**
Walk and Taxi	0%	0		1.8%	8	
Walk and Motor Car	0%	0		0.0%	0	
TOTAL	**100%**	**106**		**100%**	**464**	

Table 10.4 Number of Arrivals by Mode of Travel for Morning Peak Period (0800 – 1000) and for Overall Survey Period (0800 – 1800) based on Surveyed Modal Split

10.19 The survey enumerators were asked to record the number of motor vehicles entering the site. These would be expected to be either delivery vehicles or disabled persons. The enumerators recorded that, during the ten-hour survey period, only two motor vehicles entered the site, viz:

At 1012 a delivery vehicle arrived and left again at 1035

At 1058 a delivery vehicle arrived and left again at 1117

No other motor vehicles were recorded as entering the courtyard.

10.20 To complement this information the School were asked to record details of delivery and service vehicle activity at the site, each day for the working week 20th – 24th April 2015. This includes the period of the above survey. The results of this survey are presented in Table 10.5 below.

TIME OF ARRIVAL	TYPE OF VEHICLE (eg Transit, large box van, refuse vehicle, articulated lorry, rigid lorry)	PURPOSE (eg refuse collection, delivery to refectory, personal, postal etc)	TIME OF DEPARTURE	CURRENT FREQUENCY OF DELIVERY/ COLLECTION
	NO VEHICLE DELIVERIES ON MONDAY OR THURSDAY			
1010 Tue	**TRANSIT VAN**	**WATER DELIVERY**	**1035**	**WEEKLY**
1059 Tue	**SCHOOL VAN**	**PORTERING**	**1116**	**AS AND WHEN REQUIRED**
1120 Wed	**TRANSIT VAN**	**CONTRACTOR**	**1350**	**ONE OFF**
1200 Wed	**TRUCK**	**RUBBISH REMOVAL**	**1220**	**WEEKLY**
1350 Fri	**SCHOOL VAN**	**ESTATES**	**1400**	**AS AND WHEN REQUIRED**
1455 Fri	**SCHOOL VAN**	**IT EQUIPMENT**	**1520**	**AS AND WHEN REQUIRED**

Table 10.5 Recorded Service/Delivery Vehicle Activity 20 – 24 April 2015 by Day and Time and Type of Vehicle and Purpose

10.21 From Table 10.5 it will be seen that currently, activities at the School generate few service and delivery vehicle movements. In the week under consideration, 20 – 24 April 2015, there were no service/delivery vehicles recorded on Monday or Thursday and only two vehicle movements on each of the other three days.

10.22 The School confirm that the number of service and delivery vehicles accessing the site as recorded above is typical. It should also be noted that three of the six deliveries are identified as ‘School van’; this is in the ownership of the School and therefore under the School’s direct control.

11 Description of the proposed development

11.1 University College London (UCL) and the London School of Hygiene & Tropical Medicine (the School) seek planning approval for a proposed development to the rear of the School building at 15-17 Tavistock Place, Camden, London.

11.2 The project would involve the demolition of the structure located at the rear of the site and the construction on the area to the rear of the site of a new building to provide additional laboratory and office space, forming the Bloomsbury Research Institute (BRI), a global centre of excellence.

11.3 The BRI building would comprise two basement levels, ground floor and two upper storeys plus accommodation for roof-level plant. It is currently proposed to seek planning approval for the development in June 2015.

11.4 The project will provide two basement levels each of 1,040m^2 (Gross Internal Floor Area), a ground floor level of 1,120m^2 (including a covered atrium), a first floor level of 1,071m^2, and a second floor level of 782m^2 with roof level provision for plant and equipment. The London School of Hygiene & Tropical Medicine will retain floor space of 3,488m^2, whilst a total of 1,430m^2 (Gross External Floor Area) of floor space would be demolished, including the rear courtyard shed (957m^2).

11.5 The proposed development would provide additional laboratory and office space as part of the Bloomsbury Research Institute (BRI). The School will continue to occupy and operate from the existing building, suitably refurbished. The proposed development will provide accommodation for teaching, research and administrative staff.

11.6 Vehicular access for both the School and BRI would be via the existing vehicular access from Tavistock Place, located to the westerly end of the frontage. This would provide access to two disabled persons' parking spaces and for service and delivery vehicles.

12 Transport Characteristics of the Proposed Development

12.1 In accordance with current and emerging development plan policies, the completed BRI development at Tavistock Place would be car-free. The only car parking that will be permitted on site would be for the use of disabled drivers; two parking spaces, designed to appropriate mobility standards, would be provided within the courtyard.

12.2 Cycle parking would be provided for both the proposed BRI and for the retained existing School building in line with LBC's published parking standards as set out in Appendix 2 to the Camden Development Policies 2010-2025. The standard for use class D1, Non-Residential Institutions applies above a threshold of 500m^2 Gross Floor Area and requires, thereafter, one space per 250m^2 GFA for both staff and visitors.

12.3 The architect's drawings accompanying the planning application show the location of the proposed cycle parking provision.

12.4 For the retained School building, having a GFA of 3,488m^2 GFA, a total of 12 staff and 12 visitor spaces are required. Paragraph 9.4 of CPG7: Camden Planning Guidance 7 Transport makes it clear that "Throughout the standards, the stated number of spaces relates to the number of bicycles to be accommodated, not to the number of stands." Therefore, a total of 12 Sheffield Stand hooped cycle stands are proposed. These would be located within the existing building, towards its easterly end, with access directly from the street and internally. Lockers would also be provided within this area. This would therefore provide secure, covered cycle parking for the retained School building.

12.5 For the proposed BRI, having a GFA of 5,474m^2, a total of 20 staff and 20 visitor spaces are required. It is proposed to provide a total of 36 Sheffield Stand hooped cycle stands, located as shown on the drawings. Four of these would provide standard, double sided access and the remaining 32 would provide single sided access, resulting in a total of 40 cycle parking spaces. It is proposed to provide lockers and showers on all occupied floors.

12.6 All cycle parking would be readily accessible at ground floor level.

12.7 Section 10 above provides a detailed assessment, based on survey data collected for the present study, of existing trips to and from the site by all modes. A modal split of trips in both the morning peak period and over the course of the survey period, 0800 – 1800, are presented.

12.8 Given that the proposed BRI development would be co-located with the existing School building and that the uses are comparable, it is considered that the modal split of trips to and from BRI would be the same as that recorded as part of the multi-modal survey undertaken in April 2015, as presented in Table 10.2 for the full period of the survey (0800-1800) and in Table 10.3 for the morning peak period (0800-1000).

12.9 The Transport Statement submitted in support of the planning application provides an assessment of the total person trips likely to be generated by the proposed development. Applying the modal split of trips across the survey period overall (Table 10.2) to the number of additional person trips predicted to be generated between 0800 and 1800, gives an indication of the impact of the proposed development on the transport network over the working day as a whole, whilst applying the surveyed modal split presented in Table 10.3 above to the predicted increase in person trips between 0800 and 1000 gives an indication of the impact of the proposed development on the transport network during the morning peak period. The results of this assessment are presented in Table 12.1 below.

12.10 From Table 12.1 below it will be seen that in the morning peak period (0800 – 1000) the number of additional trips arising from the proposed development that are predicted to be undertaken entirely sustainably (on foot or by cycle) would be 24. It is predicted that 8 trips would be by bus and 49 trips would be by rail (the journey completed on foot or by cycle) with 32 by tube and 17 by other rail services, which spread across the public transport network is considered to represent an insignificant impact. Only one arrival is predicted to be by personal motorised transport (motorcycle).

Mode of Travel (including main secondary mode by distance travelled)	Mode Share (%) 0800 - 1000	Additional Trips by Mode 0800 - 1000			Mode Share (%) 0800 - 1800	Additional Trips by Mode 0800 - 1800		
		A	D	Total		A	D	Total
Walk all the way	12%	8	1	**24**	32.5%	99	85	**253**
Cycle all the way	18%	13	2		12.2%	37	32	
Walk and Tube	38%	27	5	**49**	28.4%	87	74	**257**
Walk and Train	18%	13	2		15.5%	47	40	
Cycle and Rail	3%	2	0		1.5%	5	4	
Walk and Bus	10%	7	1	**8**	7.7%	23	20	**43**
Walk and Motorcycle	1%	1	0	**1**	0.4%	1	1	**12**
Walk and Taxi	0%	0	0		1.8%	5	5	
Walk and Motor Car	0%	0	0		0.0%	0	0	
TOTAL	**100%**	**70**	**12**	**82**	**100%**	**305**	**260**	**565**

Table 12.1 Number of Predicted Additional Arrivals and Departures by Mode of Travel for Morning Peak Period (0800 – 1000) and for Overall Survey Period (0800 – 1800) based on Surveyed Modal Split

Notes – A = Arrivals; D = Departures; small discrepancies in totals due to rounding errors

12.11 Taking the working day as a whole, over the ten-hour period between 0800 and 1800 the number of additional trips arising from the proposed development that are predicted to be undertaken entirely sustainably (on foot or by cycle) would be 253. It is predicted that 43 trips would be by bus and 257 trips would be by rail (the journey completed on foot or by cycle) with 161 by tube and 96 by other rail services, which is similarly considered to be a modest increase across the public transport network as a whole. Only 2 trips are predicted to be by personal motorised transport (motorcycle), whilst ten trips are predicted to be by taxi, which again would not represent a significant impact on the local highway network.

12.12 Table 10.5 above presents the results of a survey of service and delivery vehicle trips to and from the existing School building at 15-17 Tavistock Place conducted over the course of a week. This demonstrates that a very low number of service vehicle/delivery trips are generated by the existing use on the site during a typical

working week. No trips were recorded on Monday or Thursday and only two vehicle movements on each of the other three days, with three of the six recorded visits undertaken by the School's own vehicle.

12.13 It is the applicant's view that the number of service vehicle/delivery vehicle trips will increase as a result of the BRI project. The assessment is that vehicle trips could increase to a maximum of around 5 per day and would be largely laboratory related. The applicants have submitted a Delivery and Servicing Plan for the project (as part of the Transport Statement), which shows how the transport impacts associated with servicing and delivery activities will be managed and reduced.

12.14 It is clear that the number of vehicles accessing the site following completion of the project would be low and in particular would be significantly lower than the number generated during the demolition and construction phases of development. There is a natural emphasis, therefore, on ensuring that there are robust protocols and measures in place to adequately manage, control and minimise the potential adverse impacts of construction traffic generated by the project. The Construction Management Plan submitted with the application shows how the applicants intend to manage and control these impacts.

13 Roles and Responsibilities

13.1 The key role in the day-to-day development and implementation of the Travel Plan is that of the Travel Plan Co-ordinator, (TPC) whose role would be to oversee the development and implementation of the Travel Plan and to provide liaison with the UCL Travel Plan TPC.

13.2 The TPC for the BRI, who would also act as TPC for the retained School building, would work in co-operation with the UCL TPC and would be responsible for overseeing any site specific data collection, information dissemination, marketing and physical works as required for the implementation of the Travel Plan.

13.3 The Travel Plan Co-ordinator would be appointed prior to the opening of the development. The role of the TPC would include the following:

Overseeing the development and implementation of the Travel Plan

Liaison with students and staff in respect of Travel Plan issues

Providing a point of contact with public transport operators, the Borough Council and TfL officers

Arranging Travel Surveys and other data collection to inform the development of targets and the future monitoring of the Plan

Collection and distribution of information, including publicity material

Providing a point of contact for staff and others requiring travel information

Co-ordination of Travel Plan initiatives

14 Targets, Actions and Monitoring

14.1 The survey of existing modes of travel to the site indicates zero car usage and this is likely to remain the case for the proposed development, which will have no car parking provision except for disabled visitors. Therefore, measures to promote a mode shift from car to other forms of transport for site staff and visitors will have reduced priority, as is the case for the overall UCL Travel Plan.

14.2 The applicants will however ensure that measures to promote walking, cycling and public transport as detailed in the UCL Travel Plan will be adopted and promoted as appropriate in the BRI and the retained School building.

14.3 The applicants will also ensure that measures to reduce travel for work, for business and study and for visits to the site will be undertaken as detailed in the UCL Travel Plan. These will include the promotion of video and voice conferencing and communications throughout the building. Such technologies are a key component of a successful strategy to reduce the need to travel.

14.4 The applicants will ensure that occupants of the proposed development and the retained School building contribute fully to the aims and objectives of the UCL travel plan as detailed in that document. The BRI TPC will ensure that regular monitoring of travel patterns to the new development and the retained School building is undertaken as required by the adopted UCL Travel Plan and that the buildings are making appropriate contributions to the success criteria listed in the Travel Plan.

Action Plan

14.5 Informed by the above analyses, and in particular the results of the travel survey, it is concluded that the focus of this Travel Plan should be:

- To reduce the need to travel and
- To reduce the number of service and delivery vehicle trips that are undertaken by motor vehicle, especially during the peak hours.

14.6 Consistent with the UCL Green Travel Plan Action Plan, the actions specific to the BRI site will be:

- Appoint a site-specific Travel Plan Co-ordinator prior to completion of the development to oversee the development and implementation of the Travel Plan and to provide liaison with the UCL Travel Plan TPC;
- Reduce the need to travel for work by supporting flexible working;
- Exploit as far as possible communications technologies to reduce the need to travel for business or study;
- Provision of on-site, secure cycle parking for staff and visitors, with associated locker and shower facilities to promote cycling;
- Provide links to the Green UCL website as a resource for sustainable travel information and include in staff/student induction process;
- Participate in/support UCL Green Travel Plan initiatives to encourage cycling, including exploring the feasibility of new initiatives as set out in the UCL Travel Plan;
- Work with suppliers to improve cycle safety training through the FORS scheme (or equivalent) and embed this in contracts;
- Investigate the use of bicycles for ‘internal’ deliveries;
- Where vehicles are under the direct control of BRI or the School, work to ensure that trips are scheduled to take place outside the peak hours;
- Ensure that future procurement of vehicles will take account of fuel efficiency, adopting ‘green’ technologies where tested and appropriate;
- Improve operational site logistics to achieve a 10% reduction in delivery vehicle trips within three years;
- Continue to monitor staff/student travel behaviour and use the information obtained to focus future initiatives.

14.7 The Travel Plan Co-ordinator will develop Key Performance Indicators as appropriate by which, through subsequent monitoring and data collection, the success and effectiveness of the implemented actions will be measured. This may lead to a change of emphasis, with new initiatives implemented and/or existing measures amended or removed.

Wilde Carter Clack Consulting Engineers
June 2015

Appendices

Appendix A

PTAL Assessment Result

PTAI Study Report File Details

Date	13/04/2015 07:41
Day of week	M-F
Time period	AM peak
Walk speed	4.8 kph
Walk file	PLSQLTest

POI Name: 530097, 182412

Bus Services

Reliability factor for this mode is 2
Maximum walk time for this mode is 8 minutes
Maximum walk distance for this mode is 640.0 metres

Stop UPPER WOBURN PLACE
Walk time to stop from POI is 5.83 minutes
Walk distance to stop from POI is 466.03 metres
- Route 59 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 59 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 168 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 168 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes

Stop EUSTON STATION EUSTON RD
Walk time to stop from POI is 7.99 minutes
Walk distance to stop from POI is 639.48 metres
- Route 73 Direction BACK Frequency 18.0 giving AWT of 1.67 minutes
- Route 73 Direction OUT Frequency 18.0 giving AWT of 1.67 minutes
- Route 10 Direction BACK Frequency 10.0 giving AWT of 3.0 minutes
- Route 18 Direction BACK Frequency 20.0 giving AWT of 1.5 minutes
- Route 30 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes
- Route 390 Direction OUT Frequency 8.0 giving AWT of 3.75 minutes
- Route 205 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes

Stop TAVISTOCK SQUARE
Walk time to stop from POI is 2.65 minutes
Walk distance to stop from POI is 211.63 metres
- Route 59 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 59 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 168 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 168 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes

Stop EUSTON R BRITISH LIBRARY
Walk time to stop from POI is 4.78 minutes
Walk distance to stop from POI is 382.22 metres
- Route 73 Direction BACK Frequency 18.0 giving AWT of 1.67 minutes
- Route 73 Direction OUT Frequency 18.0 giving AWT of 1.67 minutes
- Route 476 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes
- Route 476 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes
- Route 59 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 59 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 10 Direction OUT Frequency 10.0 giving AWT of 3.0 minutes
- Route 10 Direction BACK Frequency 10.0 giving AWT of 3.0 minutes
- Route 30 Direction OUT Frequency 7.5 giving AWT of 4.0 minutes
- Route 30 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 390 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
- Route 390 Direction OUT Frequency 8.0 giving AWT of 3.75 minutes
- Route 205 Direction OUT Frequency 8.0 giving AWT of 3.75 minutes
- Route 205 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes

Stop RUSSELL SQUARE STH SIDE
Walk time to stop from POI is 7.87 minutes
Walk distance to stop from POI is 629.52 metres
- Route X68 Direction OUT Frequency 4.0 giving AWT of 7.5 minutes
- Route 7 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 188 Direction OUT Frequency 8.0 giving AWT of 3.75 minutes

Stop RUSSELL SQ NTH/WOBURN PL
Walk time to stop from POI is 4.93 minutes
Walk distance to stop from POI is 394.27 metres
- Route 59 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 59 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 7 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
- Route 7 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
- Route 68 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes

Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
Route 91 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
Route 168 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
Route 168 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
Route 188 Direction OUT Frequency 8.0 giving AWT of 3.75 minutes
Route 188 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
Stop WOBURN PLACE CORAM ST
Walk time to stop from POI is 3.26 minutes
Walk distance to stop from POI is 260.78 metres
Route 59 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
Route 68 Direction OUT Frequency 9.0 giving AWT of 3.33 minutes
Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
Route 91 Direction BACK Frequency 8.0 giving AWT of 3.75 minutes
Route 168 Direction BACK Frequency 9.0 giving AWT of 3.33 minutes
Stop GRAYS INN RD ACTON ST
Walk time to stop from POI is 7.61 minutes
Walk distance to stop from POI is 609.14 metres
Route 46 Direction BACK Frequency 6.0 giving AWT of 5.0 minutes
Route 45 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes
Route 17 Direction BACK Frequency 7.5 giving AWT of 4.0 minutes

TATs for this mode
Route 59 Stop TAVISTOCK SQUARE TAT 7.98 minutes EDF 3.76
Route 68 Stop TAVISTOCK SQUARE TAT 7.98 minutes EDF 3.76
Route 91 Stop TAVISTOCK SQUARE TAT 7.98 minutes EDF 3.76
Route 168 Stop TAVISTOCK SQUARE TAT 7.98 minutes EDF 3.76
Route 73 Stop EUSTON R BRITISH LIBRARY TAT 8.44 minutes EDF 3.55
Route 10 Stop EUSTON R BRITISH LIBRARY TAT 9.78 minutes EDF 3.07
Route 18 Stop EUSTON STATION EUSTON RD TAT 11.49 minutes EDF 2.61
Route 30 Stop EUSTON R BRITISH LIBRARY TAT 10.78 minutes EDF 2.78
Route 390 Stop EUSTON R BRITISH LIBRARY TAT 10.53 minutes EDF 2.85
Route 205 Stop EUSTON R BRITISH LIBRARY TAT 10.53 minutes EDF 2.85
Route 476 Stop EUSTON R BRITISH LIBRARY TAT 10.78 minutes EDF 2.78
Route X68 Stop RUSSELL SQUARE STH SIDE TAT 17.37 minutes EDF 1.73
Route 7 Stop RUSSELL SQ NTH/WOBURN PL TAT 10.26 minutes EDF 2.92
Route 188 Stop RUSSELL SQ NTH/WOBURN PL TAT 10.68 minutes EDF 2.81
Route 46 Stop GRAYS INN RD ACTON ST TAT 14.61 minutes EDF 2.05
Route 45 Stop GRAYS INN RD ACTON ST TAT 13.61 minutes EDF 2.2
Route 17 Stop GRAYS INN RD ACTON ST TAT 13.61 minutes EDF 2.2

Best EDF is 3.76
Half of all other EDFs is 22.85

AI for this mode is 26.61

Underground Services

Reliability factor for this mode is .75
Maximum walk time for this mode is 12 minutes
Maximum walk distance for this mode is 960.0 metres

Stop Euston
Walk time to stop from POI is 8.65 minutes
Walk distance to stop from POI is 691.81 metres
- Route Northern Line Kennington to Edgware Direction N/B Frequency 5.0 giving AWT of 6.0 minutes
- Route Northern Line Morden to High Barnet Direction N/B Frequency 6.3 giving AWT of 4.76 minutes
- Route Northern Line Edgware to Kennington Direction S/B Frequency 1.3 giving AWT of 23.08 minutes
- Route Victoria Line Seven Sisters to Brixton Direction S/B Frequency 11.7 giving AWT of 2.56 minutes
- Route Victoria Line Brixton to Walthamstow Central Direction N/B Frequency 15.7 giving AWT of 1.91 minutes
- Route Northern Line Kennington to Mill Hill East Direction N/B Frequency 0.3 giving AWT of 100.0 minutes
- Route Northern Line Morden to Mill Hill East Direction N/B Frequency 1.0 giving AWT of 30.0 minutes
- Route Northern Line Edgware to Morden Direction S/B Frequency 9.7 giving AWT of 3.09 minutes
- Route Victoria Line Brixton to Seven Sisters Direction N/B Frequency 10.0 giving AWT of 3.0 minutes
- Route Northern Line Morden to Edgware Direction N/B Frequency 9.7 giving AWT of 3.09 minutes
- Route Northern Line High Barnet to Morden Direction S/B Frequency 9.0 giving AWT of 3.33 minutes
- Route Northern Line Edgware to Morden Direction S/B Frequency 8.3 giving AWT of 3.61 minutes
- Route Northern Line Kennington to High Barnet Direction N/B Frequency 4.7 giving AWT of 6.38 minutes
- Route Northern Line High Barnet to Kennington Direction S/B Frequency 5.4 giving AWT of 5.56 minutes
- Route Victoria Line Walthamstow Central to Brixton Direction S/B Frequency 15.0 giving AWT of 2.0 minutes
- Route Northern Line Morden to High Barnet Direction N/B Frequency 3.7 giving AWT of 8.11 minutes
- Route Northern Line Morden to Edgware Direction N/B Frequency 4.3 giving AWT of 6.98 minutes
- Route Northern Line Mill Hill East to Morden Direction S/B Frequency 0.3 giving AWT of 100.0 minutes
- Route Northern Line Morden to Mill Hill East Direction N/B Frequency 2.7 giving AWT of 11.11 minutes
- Route Northern Line Mill Hill East to Kennington Direction S/B Frequency 4.3 giving AWT of 6.98 minutes

Stop Euston Square
Walk time to stop from POI is 11.33 minutes
Walk distance to stop from POI is 906.61 metres
- Route Metropolitan Line Croxley to Aldgate Direction S/B Frequency 0.3 giving AWT of 100.0 minutes
- Route Metropolitan Line Aldgate to Wembley Park Direction N/B Frequency 1.0 giving AWT of 30.0 minutes
- Route Metropolitan Line Uxbridge to Aldgate Direction S/B Frequency 6.3 giving AWT of 4.76 minutes
- Route Circle Line Hammersmith (H&C Line) to Edgware Road (Circle Line) Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
- Route Metropolitan Line Watford to Aldgate Direction S/B Frequency 0.7 giving AWT of 42.86 minutes
- Route Metropolitan Line Amersham to Aldgate Direction S/B Frequency 3.0 giving AWT of 10.0 minutes
- Route Hammersmith and City Barking to Hammersmith (H&C Line) Direction IN Frequency 6.0 giving AWT of 5.0 minutes
- Route Metropolitan Line Aldgate to Amersham Direction N/B Frequency 1.3 giving AWT of 23.08 minutes
- Route Metropolitan Line Aldgate to Uxbridge Direction N/B Frequency 4.0 giving AWT of 7.5 minutes
- Route Metropolitan Line Aldgate to Watford Direction N/B Frequency 4.0 giving AWT of 7.5 minutes
- Route Metropolitan Line Watford to Aldgate Direction S/B Frequency 2.3 giving AWT of 13.04 minutes
- Route Metropolitan Line Aldgate to Watford Direction N/B Frequency 0.3 giving AWT of 100.0 minutes
- Route Metropolitan Line Chesham to Aldgate Direction S/B Frequency 0.7 giving AWT of 42.86 minutes

Route Hammersmith and City Hammersmith (H&C Line) to Barking Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
Route Circle Line Edgware Road (Circle Line) to Hammersmith (H&C Line) Direction IN Frequency 6.0 giving AWT of 5.0 minutes
Route Metropolitan Line Aldgate to Harrow-on-the-Hill Direction N/B Frequency 2.3 giving AWT of 13.04 minutes
Stop Goodge Street
Walk time to stop from POI is 11.36 minutes
Walk distance to stop from POI is 909.01 metres
Route Northern Line Edgware to Morden Direction S/B Frequency 8.3 giving AWT of 3.61 minutes
Route Northern Line Kennington to High Barnet Direction N/B Frequency 4.7 giving AWT of 6.38 minutes
Route Northern Line Kennington to Edgware Direction N/B Frequency 5.0 giving AWT of 6.0 minutes
Route Northern Line Morden to Mill Hill East Direction N/B Frequency 1.0 giving AWT of 30.0 minutes
Route Northern Line Edgware to Kennington Direction S/B Frequency 1.3 giving AWT of 23.08 minutes
Route Northern Line Morden to Edgware Direction N/B Frequency 4.3 giving AWT of 6.98 minutes
Route Northern Line Mill Hill East to Kennington Direction S/B Frequency 4.3 giving AWT of 6.98 minutes
Route Northern Line Kennington to Mill Hill East Direction N/B Frequency 0.3 giving AWT of 100.0 minutes
Route Northern Line Morden to High Barnet Direction N/B Frequency 3.7 giving AWT of 8.11 minutes
Route Northern Line High Barnet to Kennington Direction S/B Frequency 5.4 giving AWT of 5.56 minutes
Stop Kings Cross St.Pancras
Walk time to stop from POI is 9.58 minutes
Walk distance to stop from POI is 766.56 metres
Route Piccadilly Line Arnos Grove to Ruislip Direction W/B Frequency 1.0 giving AWT of 30.0 minutes
Route Metropolitan Line Aldgate to Watford Direction N/B Frequency 0.3 giving AWT of 100.0 minutes
Route Hammersmith and City Hammersmith (H&C Line) to Barking Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
Route Hammersmith and City Barking to Hammersmith (H&C Line) Direction IN Frequency 6.0 giving AWT of 5.0 minutes
Route Piccadilly Line Oakwood to Rayners Lane Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Metropolitan Line Aldgate to Uxbridge Direction N/B Frequency 4.0 giving AWT of 7.5 minutes
Route Metropolitan Line Aldgate to Wembley Park Direction N/B Frequency 1.0 giving AWT of 30.0 minutes
Route Metropolitan Line Aldgate to Amersham Direction N/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Heathrow Terminal 4 to Cockfosters Direction E/B Frequency 4.0 giving AWT of 7.5 minutes
Route Piccadilly Line Ruislip to Cockfosters Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Rayners Lane to Cockfosters Direction E/B Frequency 2.7 giving AWT of 11.11 minutes
Route Piccadilly Line Uxbridge to Oakwood Direction E/B Frequency 0.3 giving AWT of 100.0 minutes
Route Piccadilly Line Cockfosters to Rayners Lane Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Metropolitan Line Croxley to Aldgate Direction S/B Frequency 0.3 giving AWT of 100.0 minutes
Route Metropolitan Line Amersham to Aldgate Direction S/B Frequency 3.0 giving AWT of 10.0 minutes
Route Metropolitan Line Watford to Aldgate Direction S/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Ruislip to Arnos Grove Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Rayners Lane to Arnos Grove Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Northfields to Arnos Grove Direction E/B Frequency 0.7 giving AWT of 42.86 minutes
Route Victoria Line Walthamstow Central to Brixton Direction S/B Frequency 15.0 giving AWT of 2.0 minutes
Route Circle Line Hammersmith (H&C Line) to Edgware Road (Circle Line) Direction OUT Frequency 6.0 giving AWT of 5.0 minutes
Route Northern Line Morden to Mill Hill East Direction N/B Frequency 2.7 giving AWT of 11.11 minutes
Route Northern Line Edgware to Morden Direction S/B Frequency 9.7 giving AWT of 3.09 minutes
Route Circle Line Edgware Road (Circle Line) to Hammersmith (H&C Line) Direction IN Frequency 6.0 giving AWT of 5.0 minutes
Route Piccadilly Line Oakwood to Uxbridge Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Metropolitan Line Chesham to Aldgate Direction S/B Frequency 0.7 giving AWT of 42.86 minutes
Route Northern Line Mill Hill East to Morden Direction S/B Frequency 0.3 giving AWT of 100.0 minutes
Route Piccadilly Line Cockfosters to Heathrow Terminal 4 Direction W/B Frequency 6.0 giving AWT of 5.0 minutes
Route Victoria Line Brixton to Seven Sisters Direction N/B Frequency 10.0 giving AWT of 3.0 minutes
Route Piccadilly Line Heathrow Terminal 4 to Arnos Grove Direction E/B Frequency 2.0 giving AWT of 15.0 minutes

Route Victoria Line Seven Sisters to Brixton Direction S/B Frequency 11.7 giving AWT of 2.56 minutes
Route Piccadilly Line Uxbridge to Cockfosters Direction E/B Frequency 2.7 giving AWT of 11.11 minutes
Route Northern Line Morden to Edgware Direction N/B Frequency 9.7 giving AWT of 3.09 minutes
Route Piccadilly Line Cockfosters to Heathrow T5 Direction W/B Frequency 6.0 giving AWT of 5.0 minutes
Route Northern Line Morden to High Barnet Direction N/B Frequency 6.3 giving AWT of 4.76 minutes
Route Piccadilly Line Rayners Lane to Oakwood Direction E/B Frequency 0.3 giving AWT of 100.0 minutes
Route Piccadilly Line Arnos Grove to Rayners Lane Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Cockfosters to Uxbridge Direction W/B Frequency 2.0 giving AWT of 15.0 minutes
Route Piccadilly Line Arnos Grove to Uxbridge Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Metropolitan Line Aldgate to Watford Direction N/B Frequency 4.0 giving AWT of 7.5 minutes
Route Metropolitan Line Watford to Aldgate Direction S/B Frequency 2.3 giving AWT of 13.04 minutes
Route Metropolitan Line Uxbridge to Aldgate Direction S/B Frequency 6.3 giving AWT of 4.76 minutes
Route Piccadilly Line Uxbridge to Arnos Grove Direction E/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Heathrow T5 to Cockfosters Direction E/B Frequency 6.0 giving AWT of 5.0 minutes
Route Metropolitan Line Aldgate to Harrow-on-the-Hill Direction N/B Frequency 2.3 giving AWT of 13.04 minutes
Route Piccadilly Line Arnos Grove to Northfields Direction W/B Frequency 2.3 giving AWT of 13.04 minutes
Route Piccadilly Line Cockfosters to Ruislip Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Oakwood to Ruislip Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Victoria Line Brixton to Walthamstow Central Direction N/B Frequency 15.7 giving AWT of 1.91 minutes
Route Northern Line High Barnet to Morden Direction S/B Frequency 9.0 giving AWT of 3.33 minutes

Stop Russell Square
Walk time to stop from POI is 4.12 minutes
Walk distance to stop from POI is 329.4 metres

Route Piccadilly Line Cockfosters to Rayners Lane Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Cockfosters to Ruislip Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Cockfosters to Uxbridge Direction W/B Frequency 2.0 giving AWT of 15.0 minutes
Route Piccadilly Line Cockfosters to Heathrow T5 Direction W/B Frequency 6.0 giving AWT of 5.0 minutes
Route Piccadilly Line Arnos Grove to Northfields Direction W/B Frequency 2.3 giving AWT of 13.04 minutes
Route Piccadilly Line Arnos Grove to Uxbridge Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Oakwood to Uxbridge Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Arnos Grove to Rayners Lane Direction W/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Oakwood to Ruislip Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Ruislip to Arnos Grove Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Oakwood to Rayners Lane Direction W/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Rayners Lane to Arnos Grove Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Cockfosters to Heathrow Terminal 4 Direction W/B Frequency 6.0 giving AWT of 5.0 minutes
Route Piccadilly Line Uxbridge to Oakwood Direction E/B Frequency 0.3 giving AWT of 100.0 minutes
Route Piccadilly Line Heathrow Terminal 4 to Arnos Grove Direction E/B Frequency 2.0 giving AWT of 15.0 minutes
Route Piccadilly Line Uxbridge to Arnos Grove Direction E/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Heathrow T5 to Cockfosters Direction E/B Frequency 6.0 giving AWT of 5.0 minutes
Route Piccadilly Line Uxbridge to Cockfosters Direction E/B Frequency 2.7 giving AWT of 11.11 minutes
Route Piccadilly Line Rayners Lane to Oakwood Direction E/B Frequency 0.3 giving AWT of 100.0 minutes
Route Piccadilly Line Arnos Grove to Ruislip Direction W/B Frequency 1.0 giving AWT of 30.0 minutes
Route Piccadilly Line Northfields to Arnos Grove Direction E/B Frequency 0.7 giving AWT of 42.86 minutes
Route Piccadilly Line Heathrow Terminal 4 to Cockfosters Direction E/B Frequency 4.0 giving AWT of 7.5 minutes
Route Piccadilly Line Ruislip to Cockfosters Direction E/B Frequency 1.3 giving AWT of 23.08 minutes
Route Piccadilly Line Rayners Lane to Cockfosters Direction E/B Frequency 2.7 giving AWT of 11.11 minutes

TATs for this mode

Route Northern Line Kennington to Edgware Stop Euston TAT 15.4 minutes EDF 1.95
Route Northern Line High Barnet to Morden Stop Euston TAT 12.73 minutes EDF 2.36
Route Victoria Line Seven Sisters to Brixton Stop Euston TAT 11.96 minutes EDF 2.51
Route Victoria Line Brixton to Walthamstow Central Stop Euston TAT 11.31 minutes EDF 2.65
Route Northern Line Mill Hill East to Kennington Stop Euston TAT 16.37 minutes EDF 1.83
Route Northern Line Morden to Mill Hill East Stop Euston TAT 39.4 minutes EDF 0.76
Route Northern Line Edgware to Morden Stop Euston TAT 12.49 minutes EDF 2.4
Route Northern Line Edgware to Morden Stop Euston TAT 13.01 minutes EDF 2.31
Route Northern Line High Barnet to Kennington Stop Euston TAT 14.95 minutes EDF 2.01
Route Northern Line Morden to High Barnet Stop Euston TAT 17.51 minutes EDF 1.71
Route Northern Line Morden to Mill Hill East Stop Euston TAT 20.51 minutes EDF 1.46
Route Metropolitan Line Croxley to Aldgate Stop Kings Cross St.Pancras TAT 110.33 minutes EDF 0.27
Route Metropolitan Line Aldgate to Wembley Park Stop Kings Cross St.Pancras TAT 40.33 minutes EDF 0.74
Route Metropolitan Line Uxbridge to Aldgate Stop Kings Cross St.Pancras TAT 15.09 minutes EDF 1.99
Route Circle Line Hammersmith (H&C Line) to Edgware Road (Circle Line) Stop Kings Cross St.Pancras TAT 15.33 minutes EDF 1.96
Route Metropolitan Line Aldgate to Watford Stop Kings Cross St.Pancras TAT 17.83 minutes EDF 1.68
Route Metropolitan Line Amersham to Aldgate Stop Kings Cross St.Pancras TAT 20.33 minutes EDF 1.48
Route Hammersmith and City Hammersmith (H&C Line) to Barking Stop Kings Cross St.Pancras TAT 15.33 minutes EDF 1.96
Route Metropolitan Line Watford to Aldgate Stop Kings Cross St.Pancras TAT 23.38 minutes EDF 1.28
Route Metropolitan Line Chesham to Aldgate Stop Kings Cross St.Pancras TAT 53.19 minutes EDF 0.56
Route Metropolitan Line Aldgate to Harrow-on-the-Hill Stop Kings Cross St.Pancras TAT 23.38 minutes EDF 1.28
Route Piccadilly Line Ruislip to Arnos Grove Stop Russell Square TAT 27.94 minutes EDF 1.07
Route Piccadilly Line Oakwood to Rayners Lane Stop Russell Square TAT 47.72 minutes EDF 0.63
Route Piccadilly Line Cockfosters to Heathrow Terminal 4 Stop Russell Square TAT 9.87 minutes EDF 3.04
Route Piccadilly Line Ruislip to Cockfosters Stop Russell Square TAT 27.94 minutes EDF 1.07
Route Piccadilly Line Rayners Lane to Cockfosters Stop Russell Square TAT 15.98 minutes EDF 1.88
Route Piccadilly Line Oakwood to Uxbridge Stop Russell Square TAT 47.72 minutes EDF 0.63
Route Piccadilly Line Arnos Grove to Rayners Lane Stop Russell Square TAT 27.94 minutes EDF 1.07
Route Piccadilly Line Arnos Grove to Northfields Stop Russell Square TAT 17.91 minutes EDF 1.67
Route Piccadilly Line Heathrow Terminal 4 to Arnos Grove Stop Russell Square TAT 19.87 minutes EDF 1.51
Route Piccadilly Line Uxbridge to Cockfosters Stop Russell Square TAT 15.98 minutes EDF 1.88
Route Piccadilly Line Cockfosters to Heathrow T5 Stop Russell Square TAT 9.87 minutes EDF 3.04
Route Piccadilly Line Arnos Grove to Uxbridge Stop Russell Square TAT 27.94 minutes EDF 1.07
Route Piccadilly Line Oakwood to Ruislip Stop Russell Square TAT 47.72 minutes EDF 0.63

Best EDF is 3.04
Half of all other EDFs is 25.66

AI for this mode is 28.7

Rail Services

Reliability factor for this mode is .75
Maximum walk time for this mode is 12 minutes

Maximum walk distance for this mode is 960.0 metres

Stop St Pancras Domestic
Walk time to stop from POI is 10.04 minutes
Walk distance to stop from POI is 803.18 metres
Route MOORGATE to LUTON Direction T621-T82 Frequency 0.33 giving AWT of 90.91 minutes
Route BEDFORD MIDLAND to MOORGATE Direction T72-T621 Frequency 2.6 giving AWT of 11.54 minutes
Route ST ALBANS BR to SUTTON (SURREY) Direction T86-T390 Frequency 0.67 giving AWT of 44.78 minutes
Route ST ALBANS BR to WEST NORWOOD BR Direction T86-T437 Frequency 0.33 giving AWT of 90.91 minutes
Route BEDFORD MIDLAND to LONDON BLACKFRIARS Direction T72-T217 Frequency 0.33 giving AWT of 90.91 minutes
Route DOVER PRIORY to St Pancras Domestic Direction T155-T40 Frequency 1.33 giving AWT of 22.56 minutes
Route LUTON to MOORGATE Direction T82-T621 Frequency 0.33 giving AWT of 90.91 minutes
Route St Pancras Domestic to MARGATE Direction T40-T145 Frequency 1.0 giving AWT of 30.0 minutes
Route WIMBLEDON BR to ST ALBANS BR Direction T512-T86 Frequency 1.33 giving AWT of 22.56 minutes
Route SELHURST to ST ALBANS BR Direction T433-T86 Frequency 0.33 giving AWT of 90.91 minutes
Route SUTTON (SURREY) to ST ALBANS BR Direction T390-T86 Frequency 0.33 giving AWT of 90.91 minutes
Route St Pancras Domestic to FAVERSHAM Direction T40-T262 Frequency 2.0 giving AWT of 15.0 minutes
Route Ebbsfleet to St Pancras Domestic Direction T808-T40 Frequency 1.33 giving AWT of 22.56 minutes
Route MOORGATE to LUTON Direction T621-T82 Frequency 0.67 giving AWT of 44.78 minutes
Route WIMBLEDON BR to LUTON Direction T512-T82 Frequency 0.33 giving AWT of 90.91 minutes
Route MOORGATE to BEDFORD MIDLAND Direction T621-T72 Frequency 0.6 giving AWT of 50.0 minutes
Route WIMBLEDON BR to BEDFORD MIDLAND Direction T512-T72 Frequency 0.33 giving AWT of 90.91 minutes
Route BEDFORD MIDLAND to MOORGATE Direction T72-T621 Frequency 1.0 giving AWT of 30.0 minutes
Route BEDFORD MIDLAND to BRIGHTON Direction T72-T329 Frequency 2.0 giving AWT of 15.0 minutes
Route BEDFORD MIDLAND to SUTTON (SURREY) Direction T72-T390 Frequency 0.33 giving AWT of 90.91 minutes
Route BROADSTAIRS to St Pancras Domestic Direction T140-T40 Frequency 1.0 giving AWT of 30.0 minutes
Route MOORGATE to ST ALBANS BR Direction T621-T86 Frequency 1.0 giving AWT of 30.0 minutes
Route ST ALBANS BR to MOORGATE Direction T86-T621 Frequency 0.67 giving AWT of 44.78 minutes
Route WIMBLEDON BR to BEDFORD MIDLAND Direction T512-T72 Frequency 0.33 giving AWT of 90.91 minutes
Route LUTON to MOORGATE Direction T82-T621 Frequency 0.67 giving AWT of 44.78 minutes
Stop LONDON EUSTON BR
Walk time to stop from POI is 8.65 minutes
Walk distance to stop from POI is 691.81 metres
Route BLETCHLEY to LONDON EUSTON BR Direction T19-T50 Frequency 1.0 giving AWT of 30.0 minutes
Route Rugby to LONDON EUSTON BR Direction T18-T50 Frequency 0.33 giving AWT of 90.91 minutes
Route LONDON EUSTON BR to TRING Direction T50-T26 Frequency 2.0 giving AWT of 15.0 minutes
Route MILTON KEYNES CENTRAL to LONDON EUSTON BR Direction T22-T50 Frequency 1.3 giving AWT of 23.08 minutes
Route LONDON EUSTON BR to WATFORD JUNCTION Direction T50-T31 Frequency 3.0 giving AWT of 10.0 minutes
Route WATFORD JUNCTION to LONDON EUSTON BR Direction T31-T50 Frequency 0.33 giving AWT of 90.91 minutes
Stop LONDON KINGS CROSS BR
Walk time to stop from POI is 9.58 minutes
Walk distance to stop from POI is 766.56 metres
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Direction T661-T656 Frequency 0.33 giving AWT of 90.91 minutes
Route LETCHWORTH to LONDON KINGS CROSS BR Direction T648-T656 Frequency 0.67 giving AWT of 44.78 minutes
Route Cambridge to LONDON KINGS CROSS BR Direction T759-T656 Frequency 2.3 giving AWT of 13.04 minutes
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Direction T661-T656 Frequency 0.33 giving AWT of 90.91 minutes
Route ROYSTON HERTS to LONDON KINGS CROSS BR Direction T649-T656 Frequency 0.33 giving AWT of 90.91 minutes
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Direction T661-T656 Frequency 0.33 giving AWT of 90.91 minutes

Route LETCHWORTH to LONDON KINGS CROSS BR Direction T648-T656 Frequency 0.33 giving AWT of 90.91 minutes
Route LONDON KINGS CROSS BR to Peterborough Direction T656-T657 Frequency 2.0 giving AWT of 15.0 minutes
Stop LONDON ST PANCRAS
Walk time to stop from POI is 9.44 minutes
Walk distance to stop from POI is 755.1 metres

TATs for this mode
Route MOORGATE to LUTON Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route BEDFORD MIDLAND to MOORGATE Stop St Pancras Domestic TAT 22.33 minutes EDF 1.34
Route ST ALBANS BR to SUTTON (SURREY) Stop St Pancras Domestic TAT 55.57 minutes EDF 0.54
Route ST ALBANS BR to WEST NORWOOD BR Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route BEDFORD MIDLAND to LONDON BLACKFRIARS Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route DOVER PRIORY to St Pancras Domestic Stop St Pancras Domestic TAT 33.35 minutes EDF 0.9
Route LUTON to MOORGATE Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route St Pancras Domestic to MARGATE Stop St Pancras Domestic TAT 40.79 minutes EDF 0.74
Route WIMBLEDON BR to ST ALBANS BR Stop St Pancras Domestic TAT 33.35 minutes EDF 0.9
Route SELHURST to ST ALBANS BR Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route SUTTON (SURREY) to ST ALBANS BR Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route St Pancras Domestic to FAVERSHAM Stop St Pancras Domestic TAT 25.79 minutes EDF 1.16
Route Ebbsfleet to St Pancras Domestic Stop St Pancras Domestic TAT 33.35 minutes EDF 0.9
Route MOORGATE to LUTON Stop St Pancras Domestic TAT 55.57 minutes EDF 0.54
Route WIMBLEDON BR to LUTON Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route MOORGATE to BEDFORD MIDLAND Stop St Pancras Domestic TAT 60.79 minutes EDF 0.49
Route WIMBLEDON BR to BEDFORD MIDLAND Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route BEDFORD MIDLAND to MOORGATE Stop St Pancras Domestic TAT 40.79 minutes EDF 0.74
Route BEDFORD MIDLAND to BRIGHTON Stop St Pancras Domestic TAT 25.79 minutes EDF 1.16
Route BEDFORD MIDLAND to SUTTON (SURREY) Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route BROADSTAIRS to St Pancras Domestic Stop St Pancras Domestic TAT 40.79 minutes EDF 0.74
Route MOORGATE to ST ALBANS BR Stop St Pancras Domestic TAT 40.79 minutes EDF 0.74
Route ST ALBANS BR to MOORGATE Stop St Pancras Domestic TAT 55.57 minutes EDF 0.54
Route WIMBLEDON BR to BEDFORD MIDLAND Stop St Pancras Domestic TAT 101.7 minutes EDF 0.29
Route LUTON to MOORGATE Stop St Pancras Domestic TAT 55.57 minutes EDF 0.54
Route BLETCHLEY to LONDON EUSTON BR Stop LONDON EUSTON BR TAT 39.4 minutes EDF 0.76
Route Rugby to LONDON EUSTON BR Stop LONDON EUSTON BR TAT 100.31 minutes EDF 0.3
Route LONDON EUSTON BR to TRING Stop LONDON EUSTON BR TAT 24.4 minutes EDF 1.23
Route MILTON KEYNES CENTRAL to LONDON EUSTON BR Stop LONDON EUSTON BR TAT 32.47 minutes EDF 0.92
Route LONDON EUSTON BR to WATFORD JUNCTION Stop LONDON EUSTON BR TAT 19.4 minutes EDF 1.55
Route WATFORD JUNCTION to LONDON EUSTON BR Stop LONDON EUSTON BR TAT 100.31 minutes EDF 0.3
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 101.24 minutes EDF 0.3
Route LETCHWORTH to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 55.11 minutes EDF 0.54
Route Cambridge to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 23.38 minutes EDF 1.28
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 101.24 minutes EDF 0.3
Route ROYSTON HERTS to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 101.24 minutes EDF 0.3
Route WELWYN GARDEN CITY to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 101.24 minutes EDF 0.3
Route LETCHWORTH to LONDON KINGS CROSS BR Stop LONDON KINGS CROSS BR TAT 101.24 minutes EDF 0.3
Route LONDON KINGS CROSS BR to Peterborough Stop LONDON KINGS CROSS BR TAT 25.33 minutes EDF 1.18

Best EDF is 1.55

Half of all other EDFs is 11.46

AI for this mode is 13.01

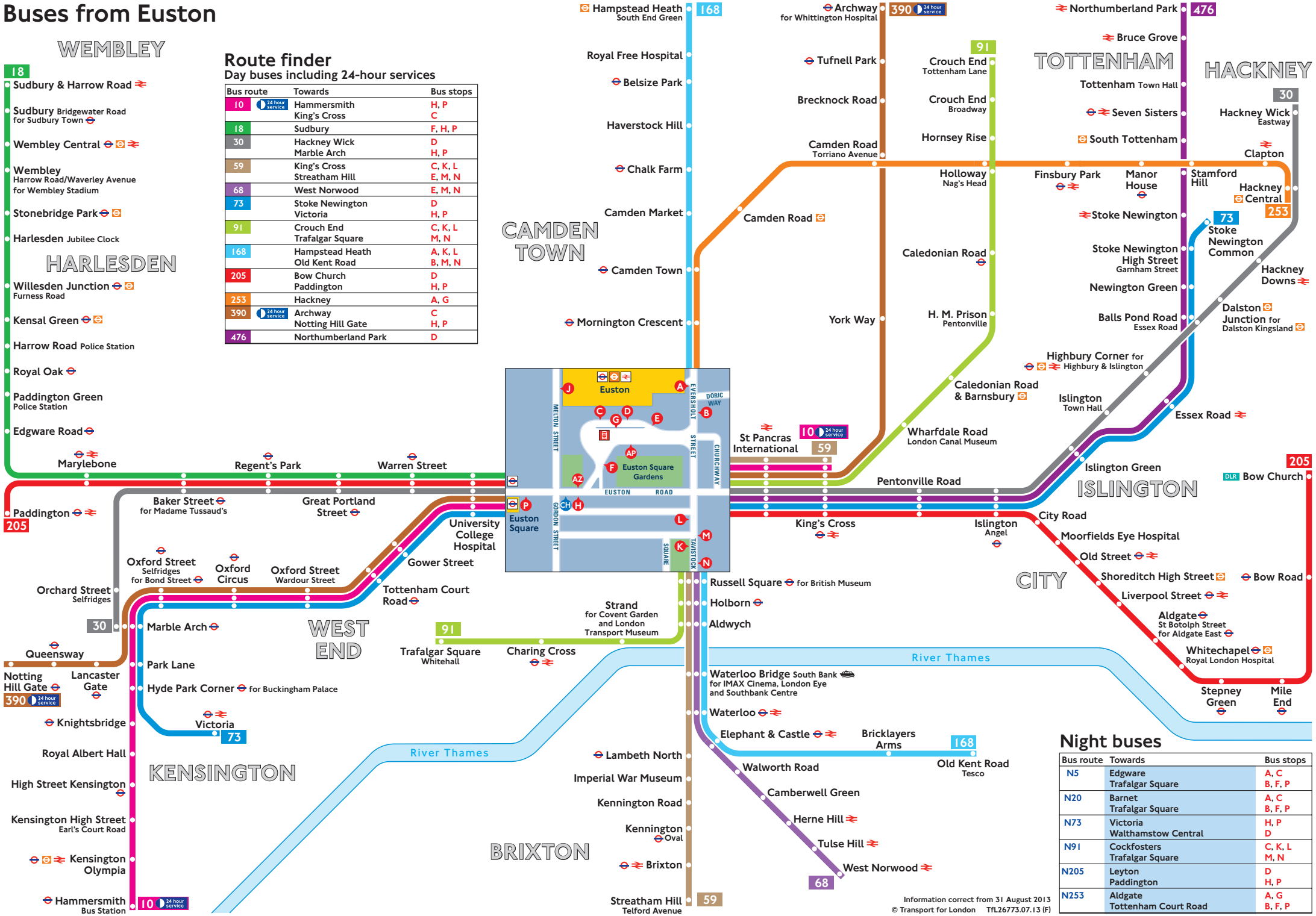
Total AI for this POI is 68.31. X: 530097, Y: 182412.

PTAL Rating is 6b.

Appendix B

Euston Station Bus Station Route Map

Buses from Euston



Night buses

Bus route	Towards	Bus stops
N5	Edgware Trafalgar Square	A, C B, F, P
N20	Barnet Trafalgar Square	A, C B, F, P
N73	Victoria Walthamstow Central	H, P D
N91	Cockfosters Trafalgar Square	C, K, L M, N
N205	Leyton Paddington	D H, P
N253	Aldgate Tottenham Court Road	A, G B, F, P

Information correct from 31 August 2013