



APPENDIX 10.8

Transport and Movement **Urban Flow**

Movement Monitoring – Video Camera Survey

University of London – Central Bloomsbury Campus

June 2015



Content

1. Study and Context
2. Methodology
3. Video Footage and Analysis
4. Results Summary and Opportunities
5. Next Steps
6. Appendices



Gordon Square



Russell Square

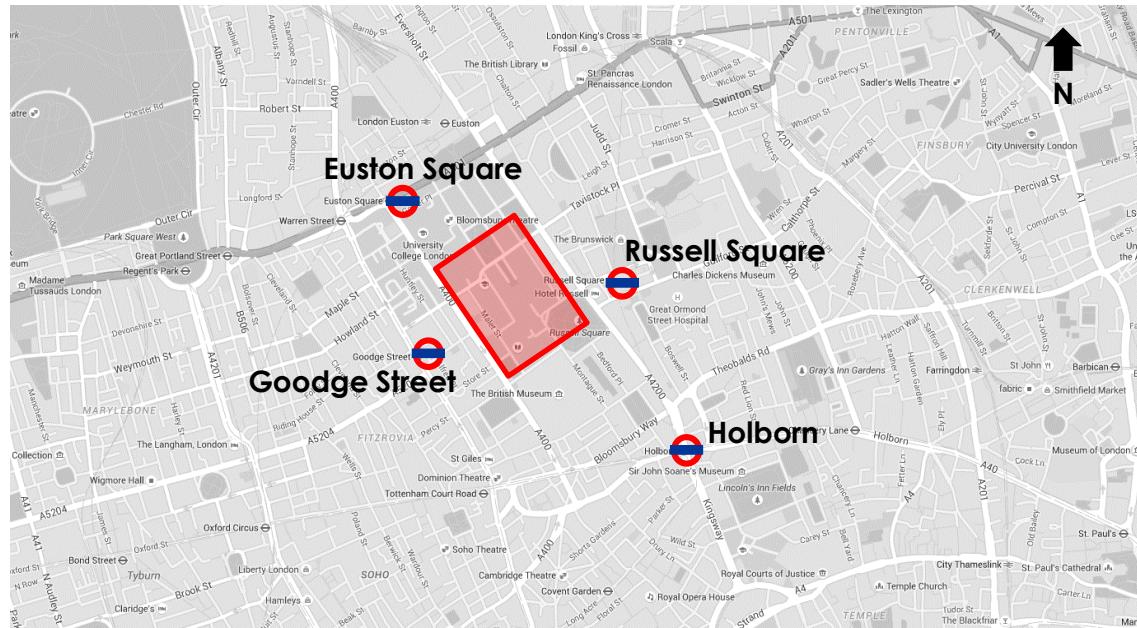
1. Study and Context

Study and Context

The Study

Urban Flow was commissioned on behalf of the University of London to commission and interpret the results of a high mast video camera survey of the streets surrounding the Central Bloomsbury Campus in order to support preparation of a campus development masterplan led by consultants BDP.

Pedestrian, vehicle and cycle movements were observed and recorded with sample movement flows noted at key locations.

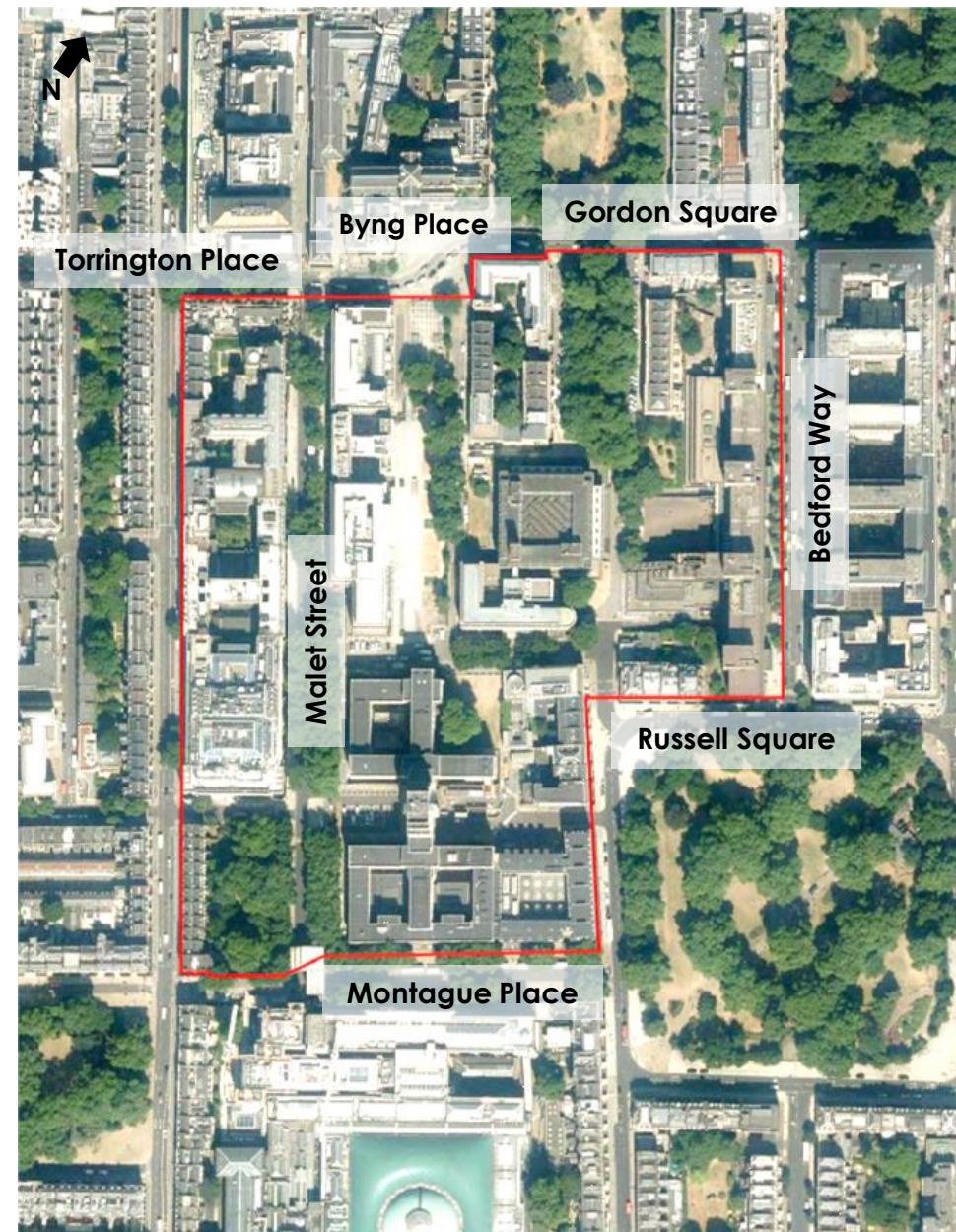


 Study Area – University of London Campus

The Area

The Central Bloomsbury Campus is bounded by the following streets:

- o Malet Street on the western side
- o Montague Place on the southern side
- o Russell Square and Bedford Way on the eastern side
- o Gordon Square, Byng Place and Torrington Place on the northern side.



Central Bloomsbury Campus – Site Area

Study and Context

West End Project

Before proceeding further, we should first note the ongoing proposals for the West End Project which will deliver substantial public realm improvements in the area to the west of the campus. The campus is expected to benefit from this work which along with the public realm improvements will also affect and amend current traffic management arrangements.

The aim of the £41 million West End Project is to unlock the area's potential, boosting business and creating new public spaces for the community and visitors to enjoy. The project will transform the Tottenham Court Road area, making it safer and more attractive place.

There will be a big increase in people coming to the area with the opening of the Tottenham Court Road Crossrail station in 2018, which will also increase the number of people travelling around and through the campus.

West End Project – Main Changes

- The one-way system will be replaced with two-way tree-lined streets.
- Segregated cycle lanes will be created.
- The scheme will reduce congestion and pollution, and make bus journeys quicker.
- Pedestrian footways will be widened.
- Five public spaces will either be created or improved along with a brand new park.
- A total of 18,000 square metres of new public realm will be created.
- Nearly 300 new trees will be planted in the area.

The project is planned for delivery by 2018 in time for the opening of Crossrail, by which time Tottenham Court Road station is expected to be busier than Heathrow Airport.

More information about the West End Project is available in the Appendices.



Bedford Square looking north along Gower Street – Existing



Bedford Square looking north along Gower Street - Proposed

Study and Context

West End Project – Opportunities for the Central Bloomsbury Campus

There are a number of changes proposed for the West End Project which will affect movements in and around the area.

Raised junction areas at:

- Gower Street & Torrington Place
- Gower Street & Keppel Street
- Gower Street & Montague Place.

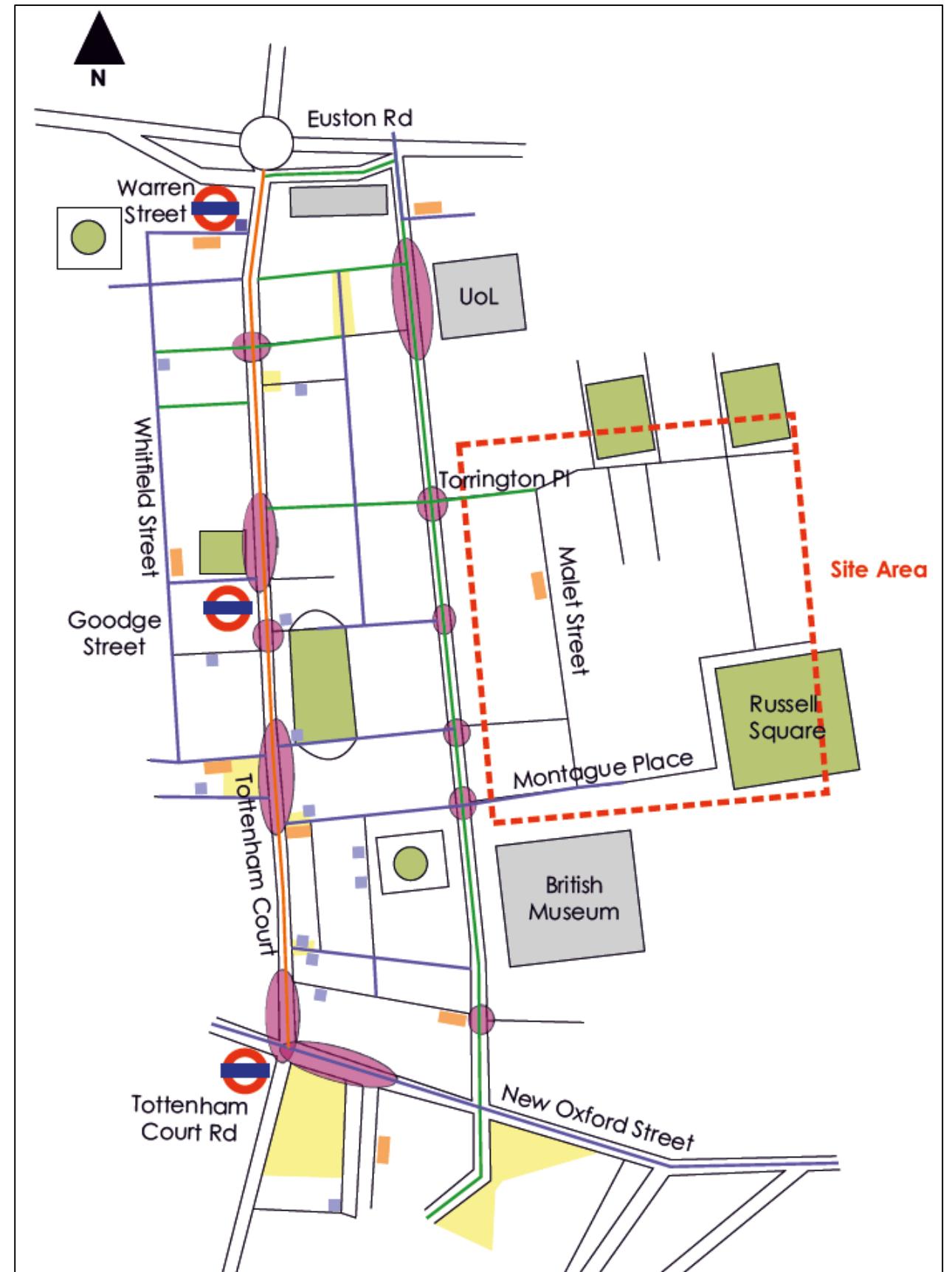
Cycle lanes

- Cycle lanes on Torrington Place, Gower Street and Bedford Square
- Two way cycling on Montague Place and Store St (west of Keppel St).

Cycle parking

- Increase in the number of cycle parking stands and cycle hire stands around the campus.

The re-design of Gower Street is expected to increase the number of cyclists and pedestrians travelling through and around the campus area.



West End Project – Main features affecting the Central Bloomsbury Campus

More information about the West End Project is available in the Appendices.

2. Methodology

Methodology

High mast video cameras were installed at 15 locations to provide coverage of the site boundaries. The plan below shows the approximate location and coverage of each of the camera.

The video survey took place from midnight on the Wednesday 20th of May to midnight on Saturday 23rd of May 2015 (total period of 72 continuous hours).



Approximate video camera locations

Observed Flows

To aid interpretation of conditions, sample flow counts have been made at a key location and factored-up to represent peak hours flows. Typically those sample counts were for 15 minute periods.



Legend

1. Byng Place/ Torrington Square – looking S
- 1b. Byng Place/ Torrington Square – looking SE
2. Byng Place/ Torrington Place – looking SW
3. Malet Street a) – looking N
4. Malet Street b) – looking S
5. Malet Street c) – looking S
6. Keppel Street/Senate Hs entrance – looking E to the entrance of the Senate Hs
- 6b. Keppel Street/ Senate House entrance – looking S to Malet St
7. Malet Street/ Montague Place – looking E
8. Montague Place – looking NE (relocated from intended position further east)
9. Russell Square (campus entrance) – looking NW
10. Bedford Way/Russell Square – looking SW
11. Bedford Way – looking S
12. Bedford Way/Tavistock Square – looking SW
13. Gordon Square/Woburn Square – looking W

3. Video Footage and Analysis

Video Footage & Analysis

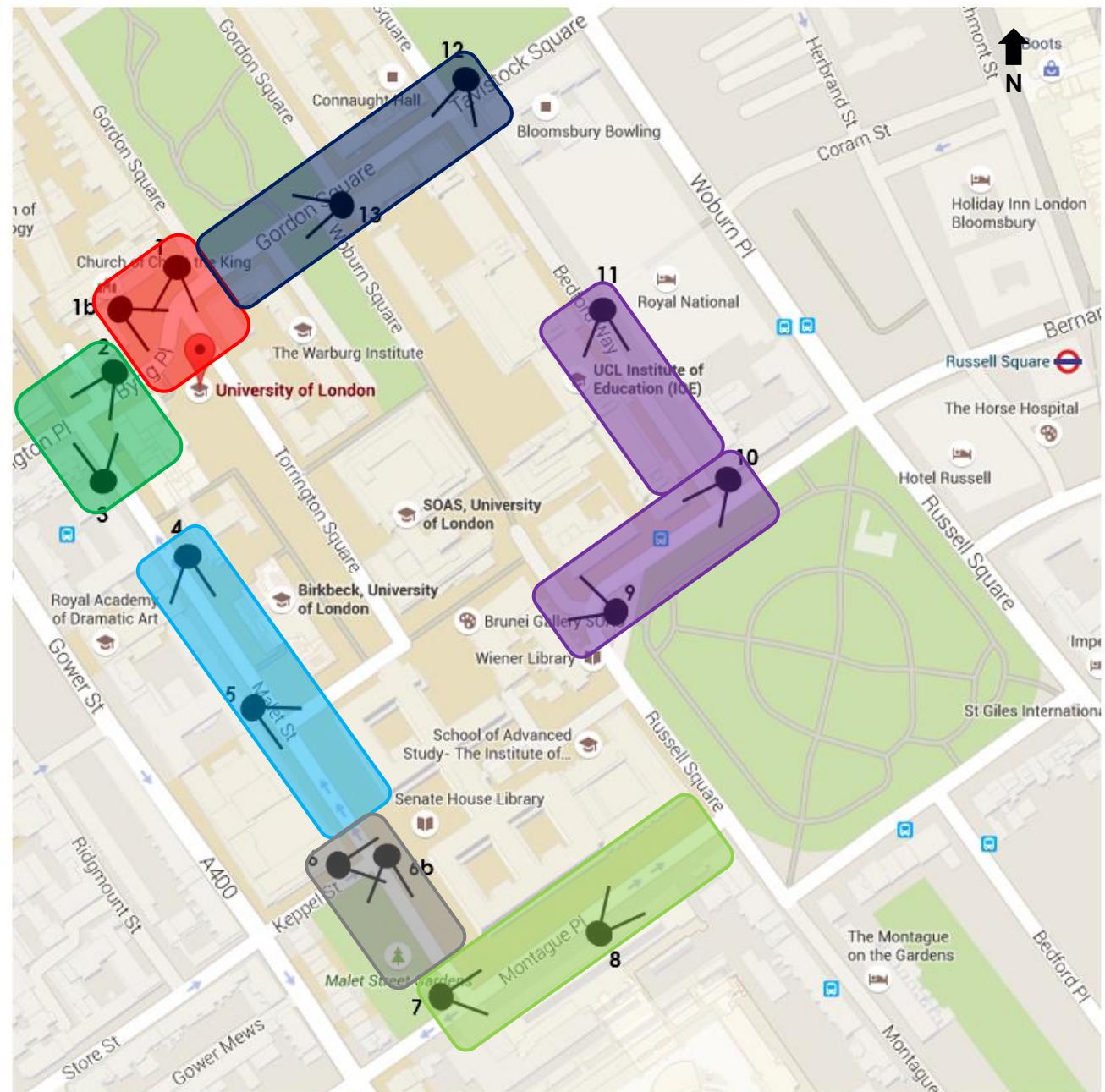
Video Footage & Analysis

The video cameras gathered footage over a 72 continuous hour period, between Thursday the 21st of May and Saturday the 23rd of May inclusive. That footage has been viewed for each camera location with sample flow counts and movements patterns identified.

This preliminary assessment of conditions has made use of sample (typically 15 minutes) records of pedestrian / cyclist / vehicle flows factored-up to represent hourly flows. Appropriate care has been taken to ensure the sample period's representativeness in relation to the overall peak period duration.

For ease of analysis, the site area has been separated in 5 different zones:

- **Byng Place** – Camera No 1 and 1b
- **Torrington Place** – Camera No.2 and 3
- **Malet Street** – Camera No.4 and 5
- **Senate House Vicinity** – Camera No. 6 and 6b
- **Montague Place** – Camera No.7 and 8
- **Russell Square & Bedford Way** – Camera No. 9, 10 and 11
- **Tavistock & Gordon Square** – Camera No.12 and 13.



Zones and approximate video camera locations

Video Footage & Analysis – Byng Place



Camera No. 1b – Segregation of users within the shared space



Camera No. 1 – Traffic congestion on Byng Place

Camera No.1 and No.1b

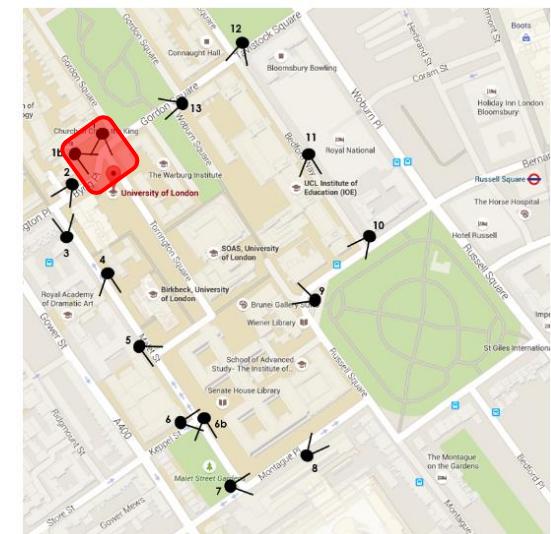
Byng Place is very busy with a substantial flow of vehicles, cycles and pedestrians travelling through the area.

Observations

- Service vehicles are seen entering and exiting Torrington Square.
- Traffic speeds were observed to be noticeably slower in the evening peak hour.
- Cyclists often ride at speed and very purposefully in the shared space area (especially at peak hour) which discourages pedestrians in crossing – pedestrians tend to walk on shared space's nominal 'footway' space and cross at either end only.
- The 'shared space' on Byng Place underperforms with segregation remaining between the different types of users, particularly cyclists as they ride at high speed through the area and pedestrians as they have no reason to change footway.
- Relatively few people were seen using the benches and public space to the north-east corner of the shared space near the church.
- There is also issue with cyclists riding on the road instead of the segregated cycle lane as they can't reach the segregated cycle lane when coming from the adjacent streets (like Woburn Square, Torrington Square or Malet Street).

Key Issues

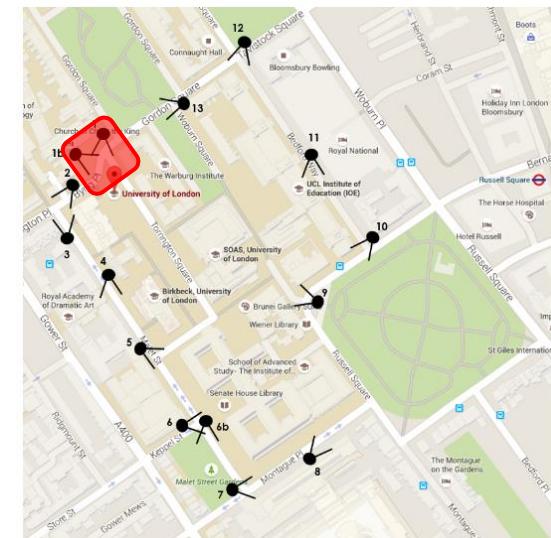
- Underperforming Shared Space
- Vehicle, cyclist and pedestrian conflicts



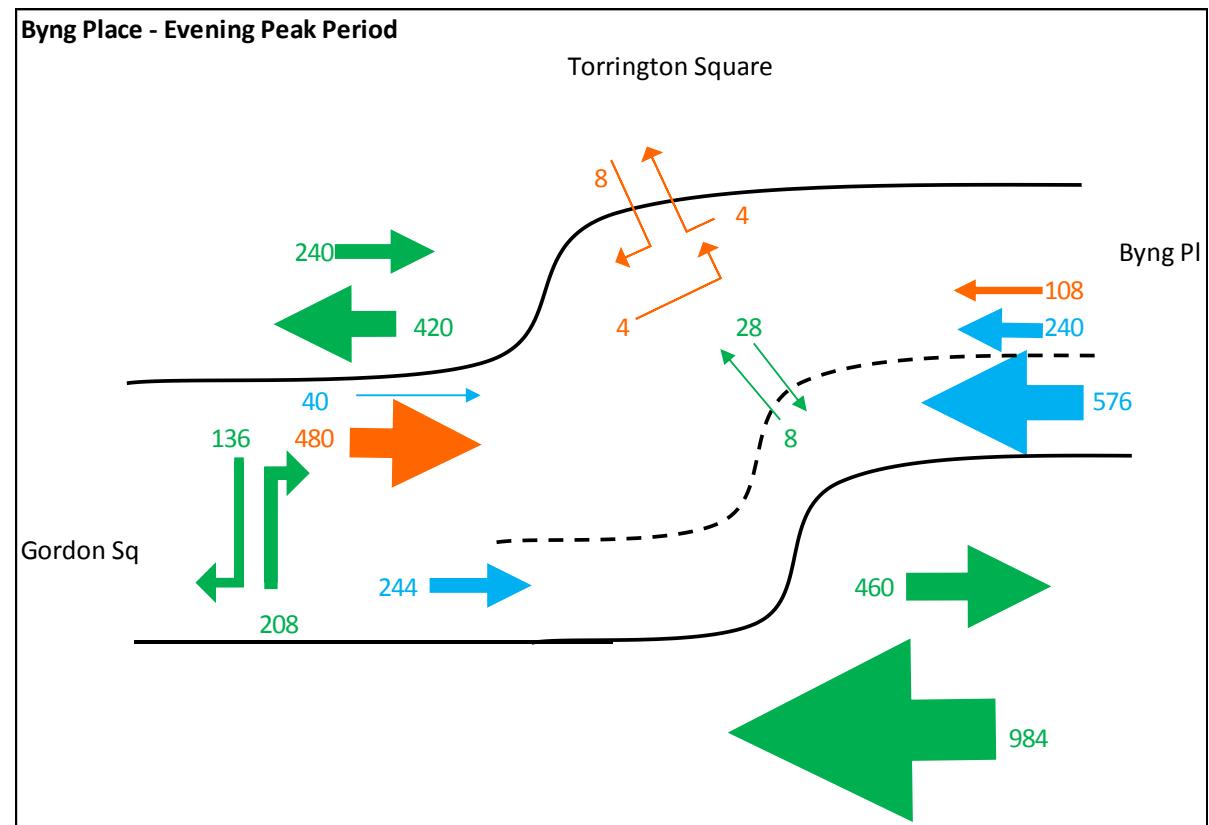
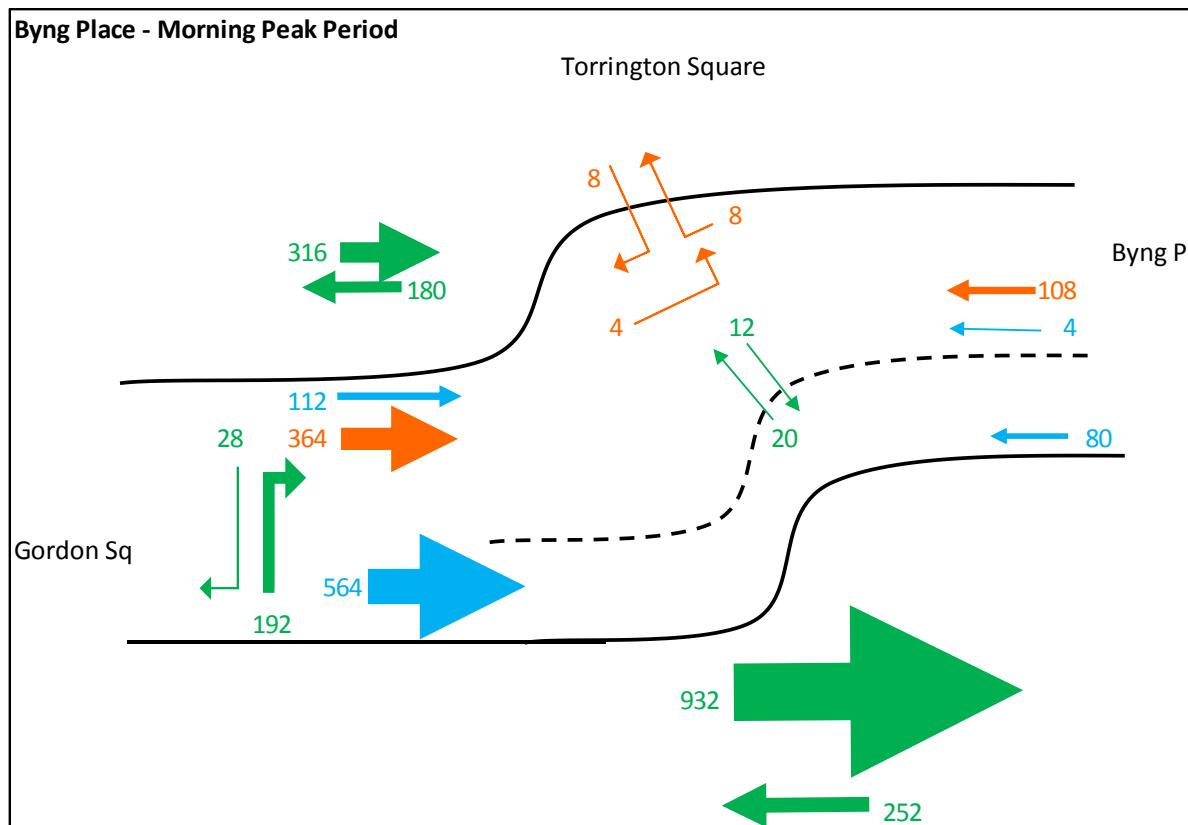
Video Footage & Analysis – Byng Place

Observed Flows

- A substantial flow of pedestrians, cyclists and vehicles travel through this area with 2,176 pedestrians, 932 cyclists and 532 vehicles travelling through the area at peak times.
- Morning peak period – most traffic heads westwards.
- Evening peak period – a substantial flow of pedestrians and cyclists travel eastwards. However, vehicles mainly drive westwards similar to the morning peak.
- Approximately 25% of cyclists riding through the area during peak period cycle on the carriageway alongside general traffic rather than within the shared pedestrian/cyclist area.
- Very few pedestrians were seen crossing Byng Place.
- The majority of pedestrian movement takes place on the northern side of Byng Place.



Vehicle, cycle and pedestrian flows



Video Footage & Analysis – Torrington Place

Camera No.2 and No.3

The Torrington Place / Malet St junction is an area of intense activity between all users, and quite hazardous too owing to the variety of users and the constrained street environments. Malet Street (north) however is a lightly trafficked road mainly used by service vehicles.



Observations

- Cyclists ride very purposefully and at speed with pedestrians needing to take particular care when crossing – in addition to watching for motorised traffic.
- Cyclists have difficulties in joining the cycle lane on Malet St due to the segregated cycle lane on Torrington Place and the intense vehicle traffic.
- A small number of vehicles enter Malet Street from the north despite the 'No Entry' signing.
- Traffic is slow-moving at peak times, with the zebra crossing helping to regulate the flow of vehicles.
- Pedestrian flows increased when the UCL gate was open.
- There are a substantial number of service vehicles parking at the north-end of Malet Street (e.g. DPD, Royal Mail, etc.).
- The cycle parking stands are very well used with pedestrians needing to walk around the stands to cross Malet Street – on Saturday however, the cycle stands park is less well used and traffic volumes lower – pedestrians can then cross the road more freely.
- Service vehicles tend not to park on the provided inset loading pads on Malet Street (north) but elsewhere on the road, often obstructing use of the cycle lane.

Key Issues

- Intense pedestrian / cyclist / vehicle activity at peak times
- Slow moving traffic at peak hours
- Cyclists have difficulties in joining the cycle lane from/to Malet St



Camera No.2 – Cyclist/pedestrian conflict



Camera No.2 – UCL Entrance



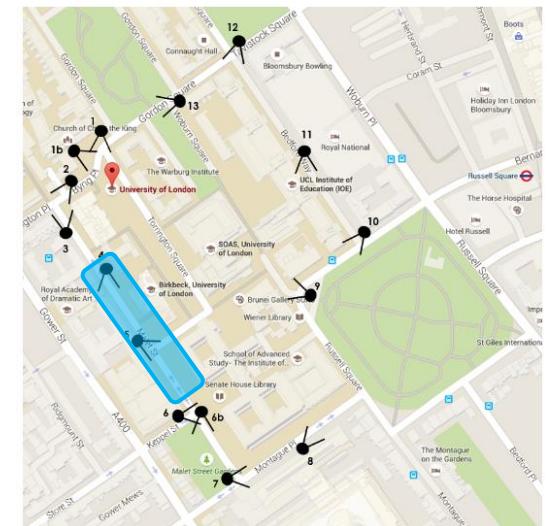
Camera No.3 – Delivery lorries parking on-street

Video Footage & Analysis – Malet Street (north of Keppel St)

Camera No.4 and No.5

Malet Street is a lightly trafficked road through with very few people crossing the road, meeting or dwelling in the street despite the generous street proportions and tree-lined environment.

Note: Malet St (north of Keppel St) is a two-way street, but with 'No Entry' from Torrington Place / Byng Place. Therefore vehicles (including coaches) can turn left into it from Keppel St for parking and servicing.

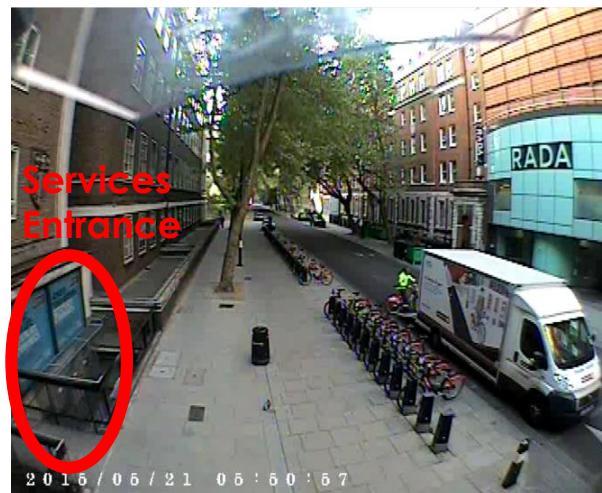


Observations

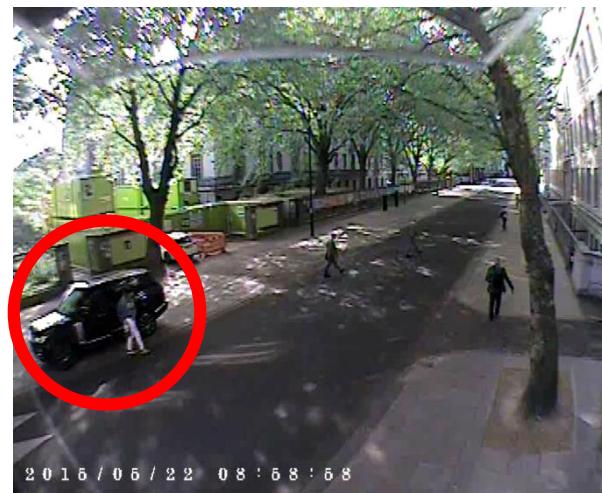
- Malet Street is a very lightly trafficked road used mainly for service vehicles (e.g. courier, delivery, bin collection, maintenance, etc.).
- Very few people cross the street or stop for any time within it.
- Service vehicles tend not to park on the provided inset loading pads but elsewhere on the road, often obstructing use of the cycle lane.
- Some coaches for/from the British Museum park in Malet Street – though turning to face southbound within the coach parking pads.
- This western entrance of the campus is used as a pick-up and drop-off zone.
- Few motorists were observed using the parking space provided near the campus entrance though usage seems to increase during the evening.

Key Issues

- Service vehicle parking on-street
- Malet St (north) has little role to play as part of the local road network



Camera No.4 – Delivery vehicle parking on-street.



Camera No.5 – Campus drop-off area.



Camera No.5 – Delivery vehicle.

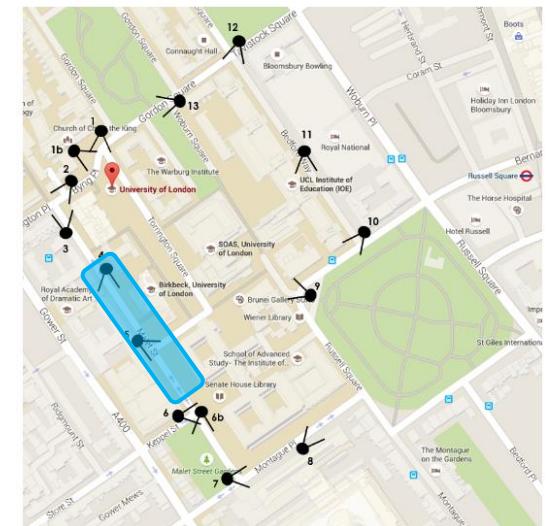


Camera No.5 – Coaches parking on Malet Street.

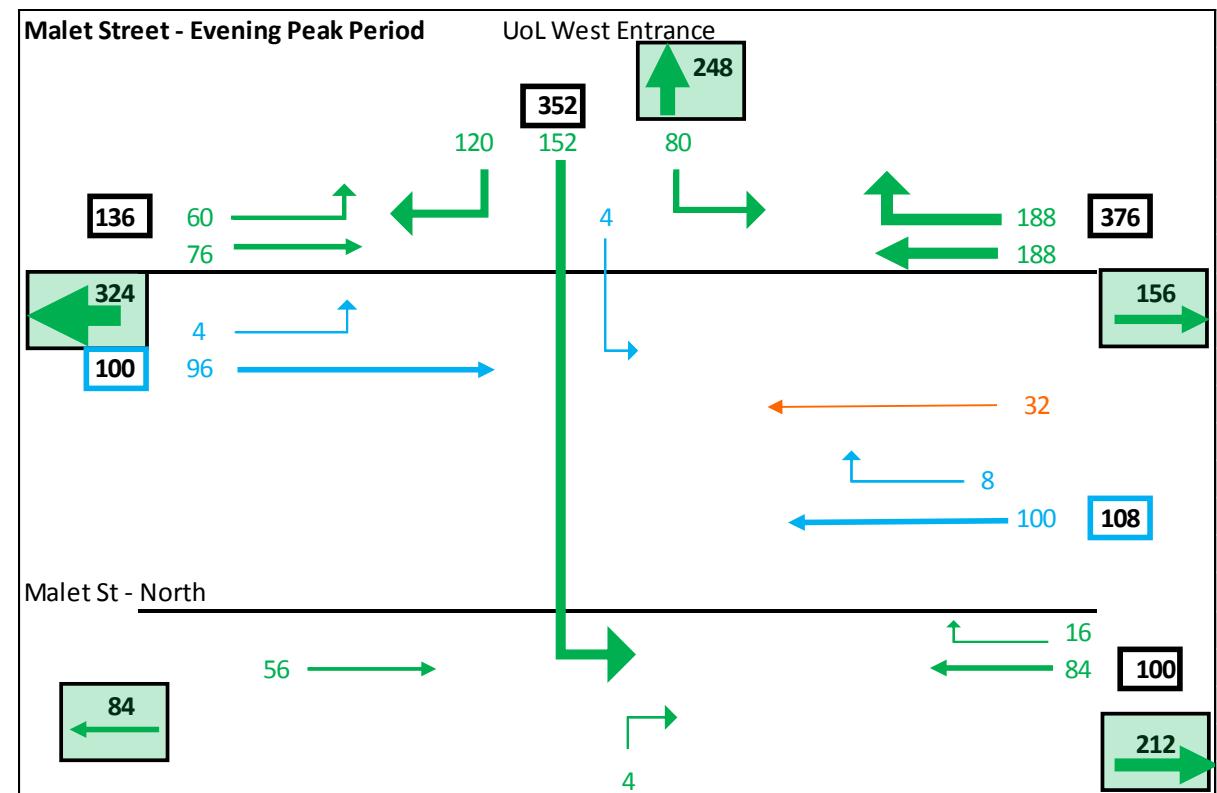
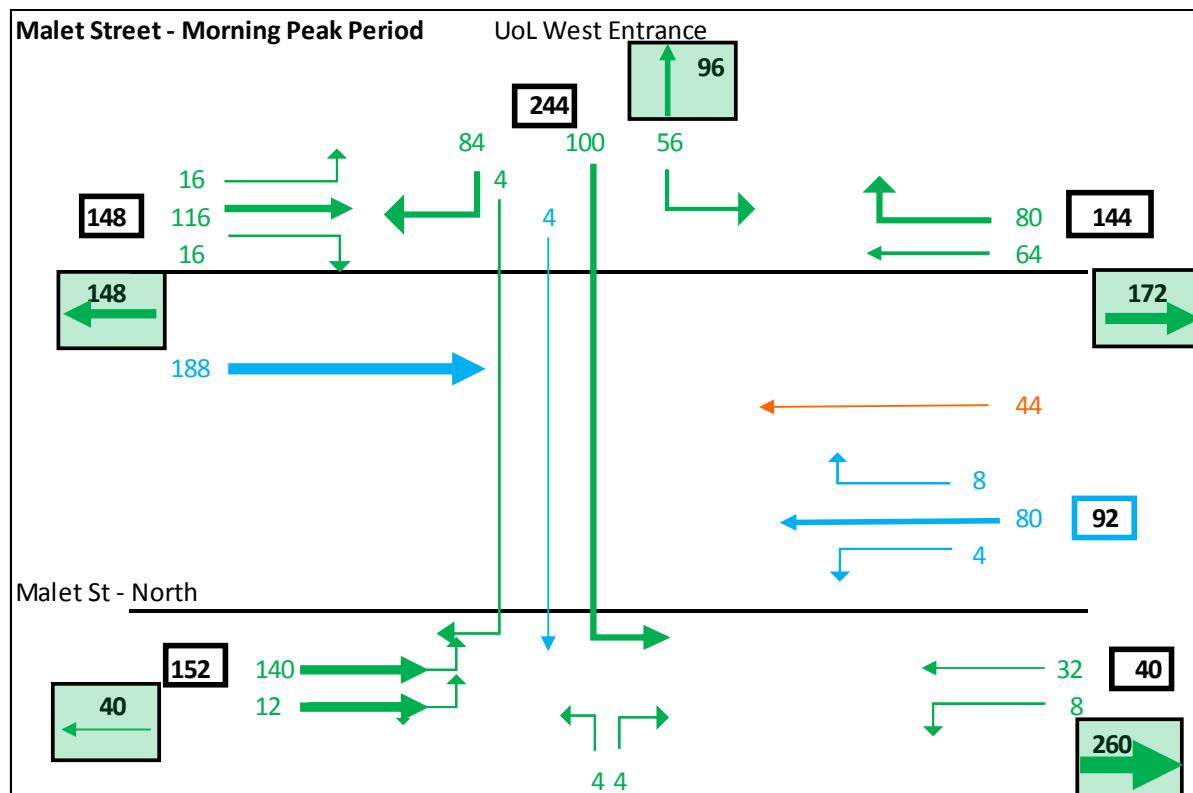
Video Footage & Analysis – Malet Street

Observed Flows

- Pedestrian, cyclist and vehicle flows are at a generally low level with 872 pedestrians, 244 cyclists and 40 vehicles travelling through the area at peak times.
- Very few vehicles drive on Malet Street with a flow of 2 vehicles/min during peak periods.
- Morning and evening peak period flows for pedestrians and cyclists are similar at 12-17 pedestrians and 5 cyclists per minute.
- The University of London west entrance accounts for much of the pedestrian activity on the eastern side of Malet St both in terms of footfall and groups stopping to meet/greet.



Vehicle, cycle and pedestrian flows



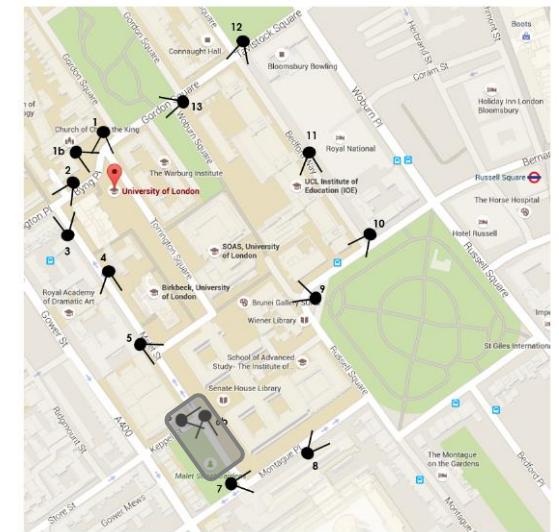
Video Footage & Analysis – Senate House Vicinity

Camera No.6 and No.6b

This area is busy sporadically with many pedestrians crossing the Keppel St/Malet St junction to enter the university at Senate House, and Malet Street between Keppel Street and Montague Place representing a rat-run for vehicles travelling east to west between Gower St and Russell Square via Montague Pl.

Observations

- There is a substantial flow of vehicles on Keppel St, including coaches, arriving in traffic signal regulated 'platoons' from Gower St and turning right into Malet St (south).
- Very few vehicles enter the university gates.
- This area is also home to pedestrians crossing to enter the university – people also stop to meet and dwell in front of the university entrance or on the north-east corner of Keppel Street.
- Malet Street between Keppel Street and Montague Place is one-way southbound for vehicles, but two-way for cyclists – this contra-flow requiring some caution on behalf of northbound cyclists.
- Coaches park on-street due to the lack of coach parking spaces in Montague Place.
- Cyclists riding northbound from Malet St (south) cross the carriageway and turning traffic in order to park in front of the Senate House entrance – a hazardous movement.
- During weekdays, cycle and motorcycle parking areas are full – during the weekend, the motorcycle parking is sometimes used for coach parking.



Key Issues

- Keppel Street – Malet Street (south) – Montague Place rat-run
- Pedestrian, cyclist and vehicle conflict at Keppel St junction
- Uncertain traffic management nature of Malet Street for users

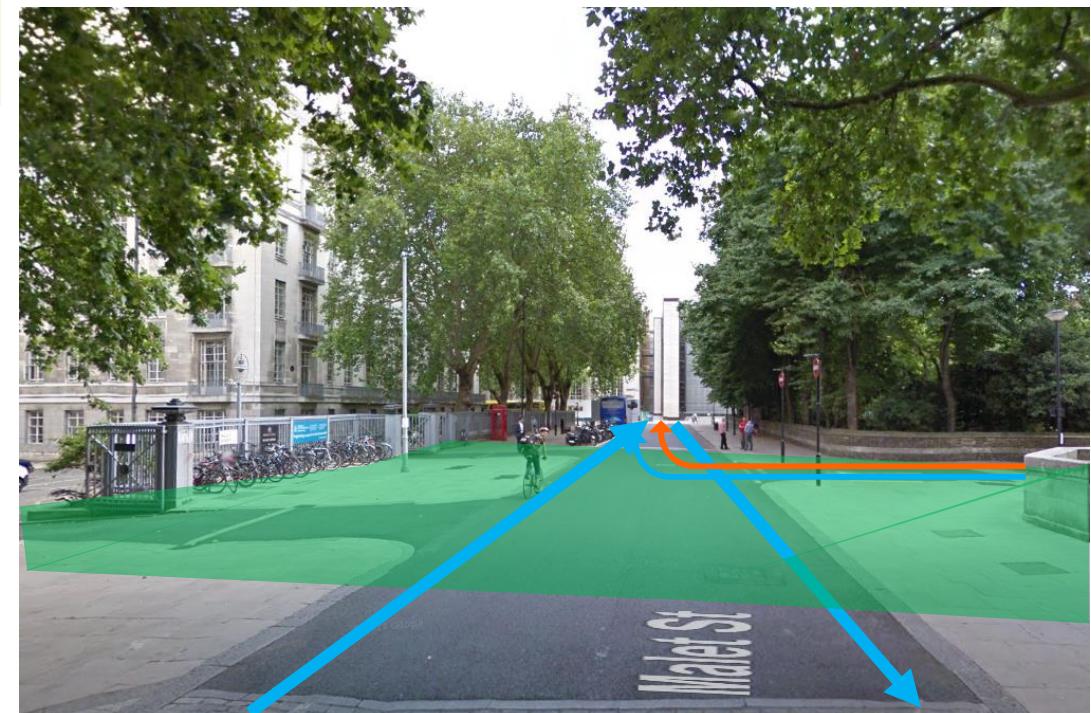


Camera No.6b – Coaches parking on-street.

Movement Monitoring



Camera No.6 – Hazardous road crossing movements by cyclists parking their bicycles.



Pedestrian (green), vehicle (orange) and cyclist (blue) movements.

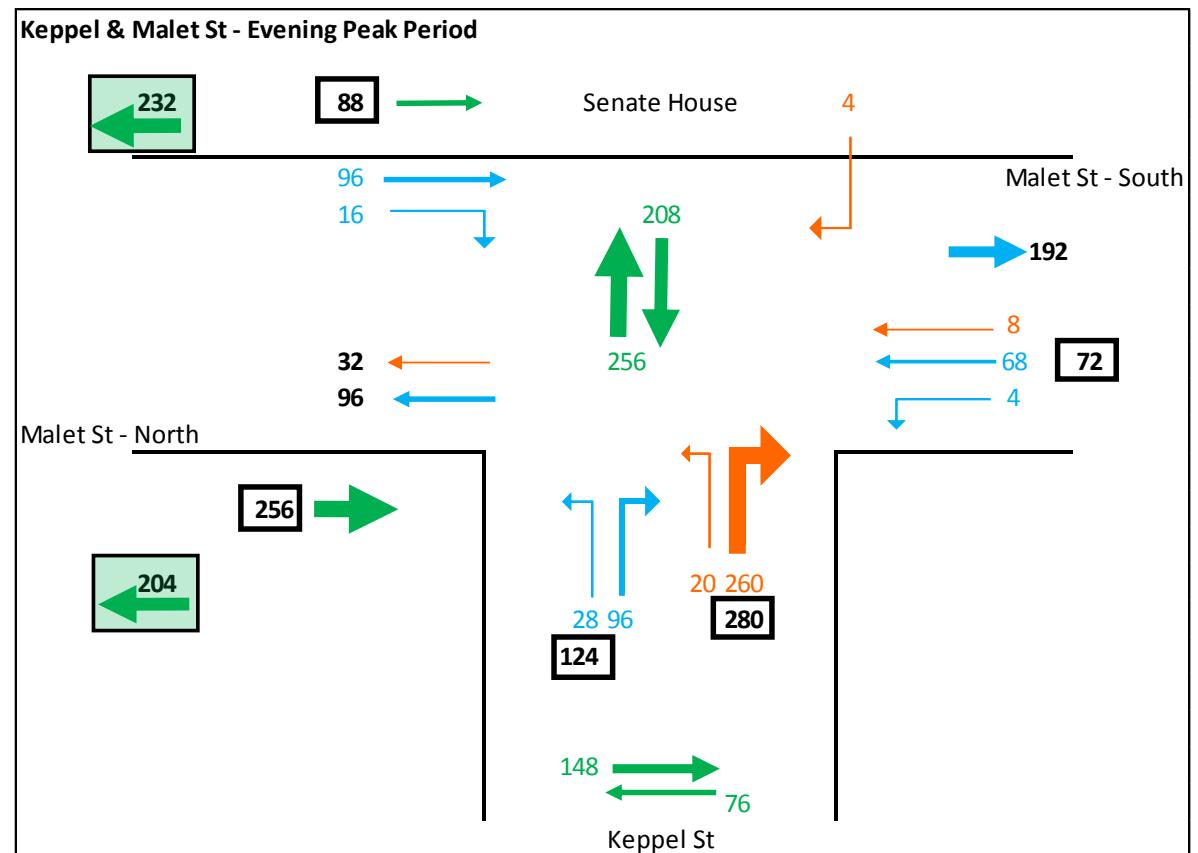
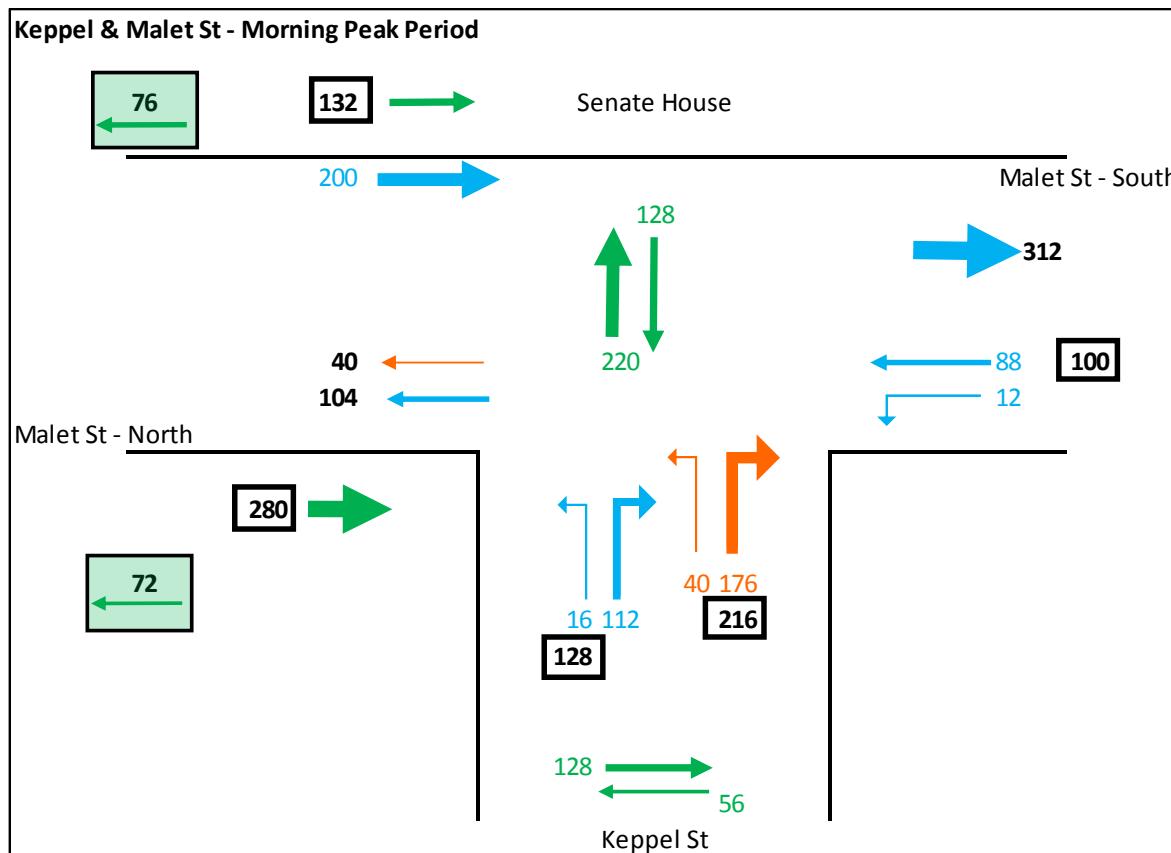
Video Footage & Analysis – Senate House Vicinity

Observed Flows

- Pedestrian flow is relatively more significant than cyclist and vehicle flow in the area with 988 pedestrians, 368 cyclists and 256 vehicles travelling through the area at peak times.
- Vehicle flows from Keppel St into Malet St are not especially high in absolute terms at 216 (AM peak hour) and 280 (PM peak hour) but the rat-running nature of that traffic and the prevalent pedestrian / cyclist movements exacerbate the impact of that traffic.
- Malet St is well-used by cyclists in both directions with two-way flow at 300 (AM peak hour) and 184 (PM peak hour).
- The number of pedestrians crossing the road at the Malet St / Keppel St junction is not especially high in absolute term at 348 (AM peak hour) and 464 (PM peak hour) but the fact that they cross the road freely and treat it as a shared space exacerbate the impact of that traffic.



Vehicle, cycle and pedestrian flows



Video Footage & Analysis – Montague Place



Camera No.8 – Coaches dropping off passengers



Camera No.7 – Cyclist cutting the corner into Malet St



Camera No.7 and No.8

Coach traffic serving the British Museum is substantial and dominates the street (starting from 9:45am). There is also a large number of cyclists and pedestrians are passing through this area.

Observations

- Traffic is sometimes slow-moving due to the number of coaches serving the museum - e.g. 9:45am – 10am : 7 coaches.
- Coaches park on-street and within the pedestrian areas as there are often insufficient coach parking spaces on Montague Place between 10:00am and 5:30pm.
- There are a significant number of cyclists riding purposefully along Montague Place.
- Cyclists cut the corner from Montague Place to Malet Street – hazardous behaviour given the often busy southbound traffic along Malet St.
- Many people stop, greet others and gather in front of the museum.
- No service vehicles were seen servicing the museum at the Montague Pl/Malet St junction – however we understand the service lift was out of operation during the survey period.
- The Montague Pl / Malet St junction area is treated as a shared space by pedestrians as there are very few vehicles turning right from Malet St into Montague Pl.
- From 11:45am to 19:00pm, a mobile catering van parks and trades in front of the museum.

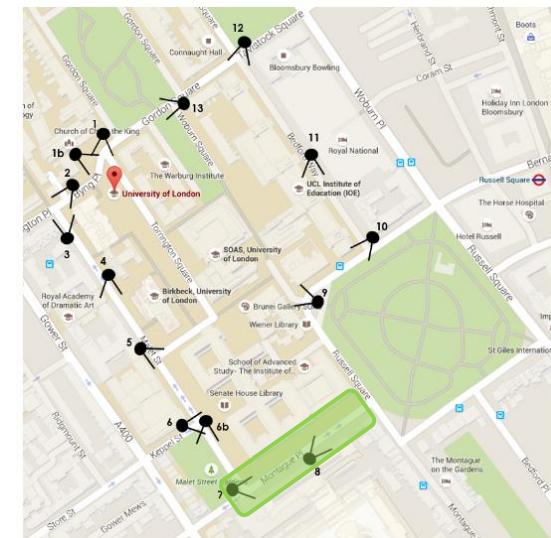
Key Issues

- Coach parking fully occupied
- Well used by cyclists
- Some congestion caused to through movements by coach activity

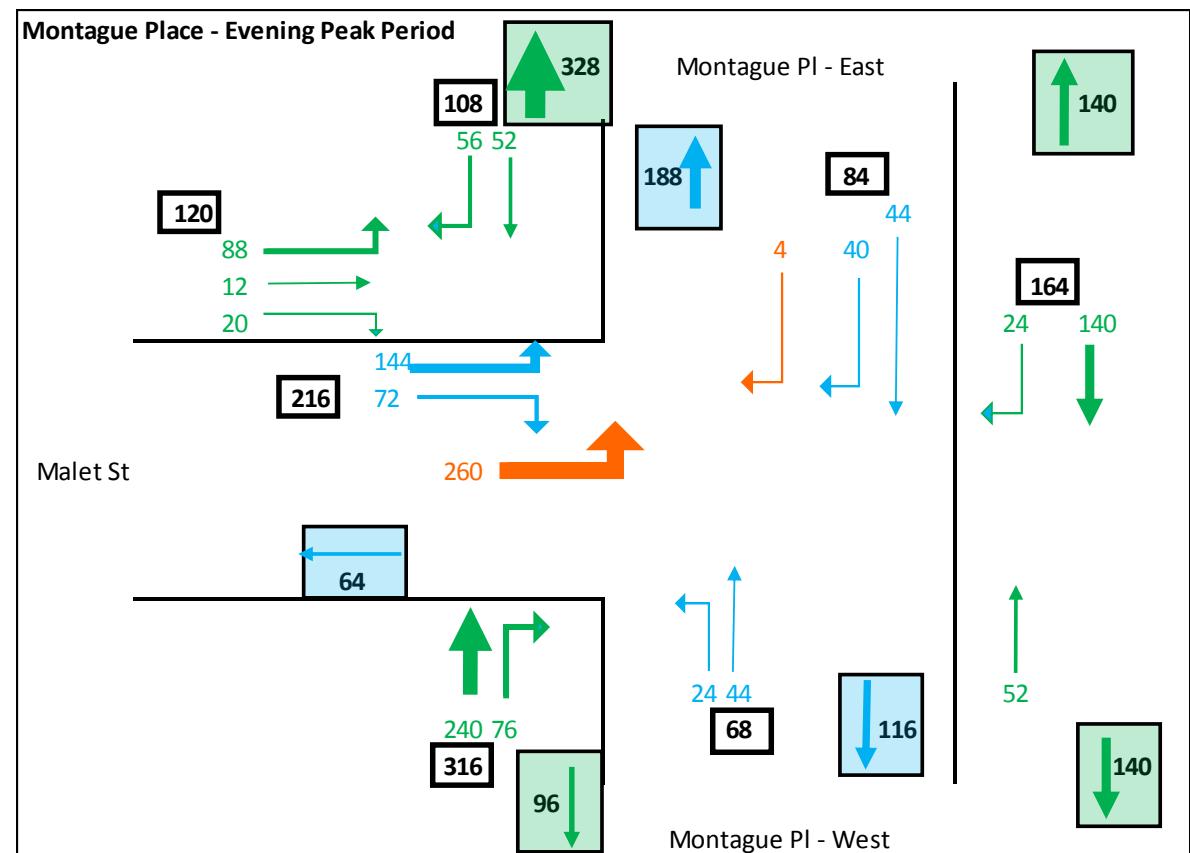
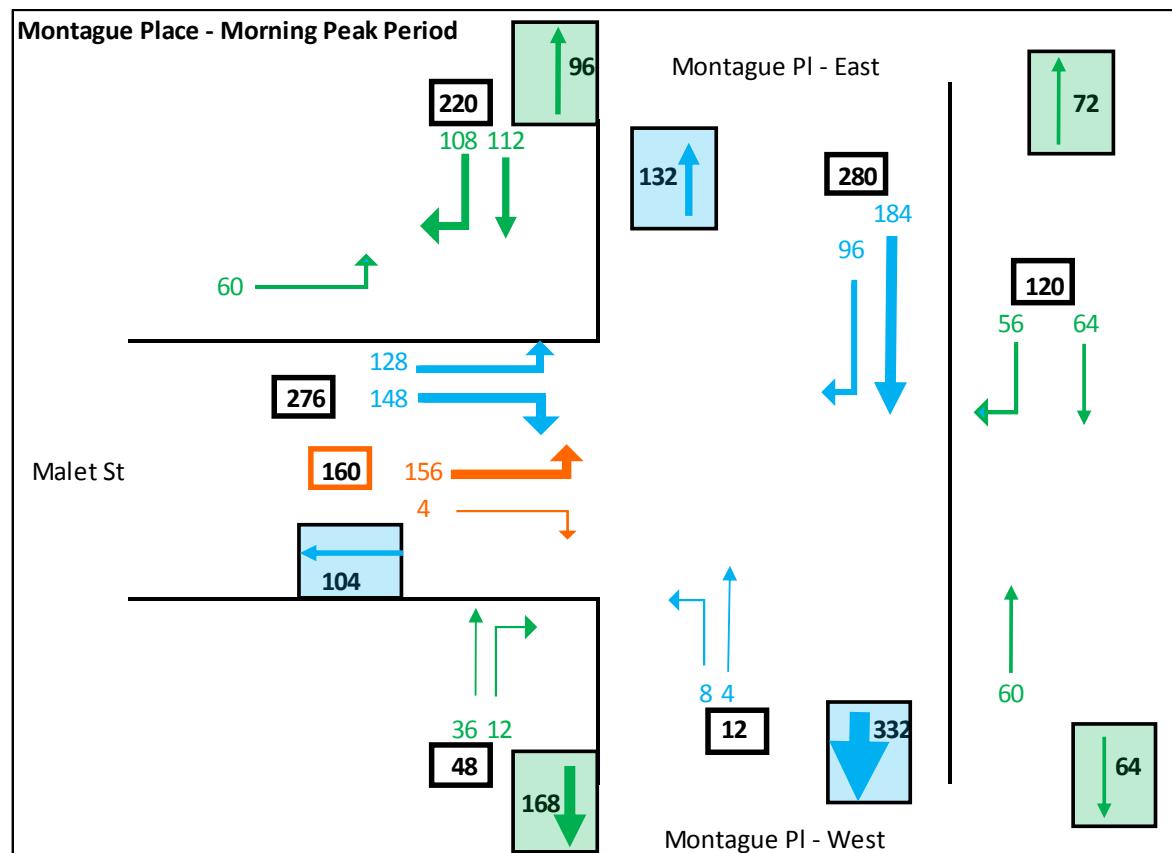
Video Footage & Analysis – Montague Place

Observed Flows

- There is a substantial flow of pedestrians and cyclists travelling through this area with 552 pedestrians, 468 cyclists and 212 vehicles travelling through the area at peak times.
- Montague Place (west) is an important link for cyclists with 412 (AM peak hour) and 272 (PM peak hour) two-way movements (west of Malet Street).
- Montague Place (east) is important for cyclists too with westbound movements dominating, 344 (AM peak hour) and 184 (PM peak hour) – to be expected given the one-way (westbound) street operation.
- Vehicle movements are generally modest turning left from Malet Street at 156 (AM peak hour) and 260 (PM peak hour).



Vehicle, cycle and pedestrian flows

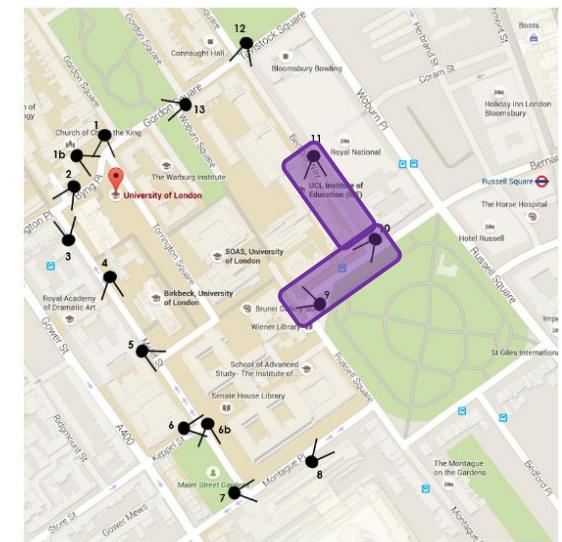


Note: The pedestrian flow turning left from Montague Place into Malet St was not fully visible from the camera. Therefore the total number of pedestrians walking through the area may be greater than those stated on the diagrams above.

Video Footage & Analysis – Russell Square & Bedford Way

Camera No.9 – Observations

- Several bus routes run along Russell Square and this, along with the carriageway obstruction presented by the bus stand means vehicles have to overtake and drive in the opposing lane – risking collision.
- Cyclists entering/exiting the campus have to negotiate a very busy movement environment using the pedestrian crossing or weaving their way between the vehicles.
- The eastern entrance of the campus is mainly used by pedestrians, cyclists and some service vehicles
 - Morning peak period: 108 cyclists and 16 vehicles entering the campus and 64 cyclists and 8 vehicles exiting.
 - Evening peak period: 68 cyclists and 8 vehicles entering the campus and 16 cyclists and 8 vehicles exiting.
- Pedestrians were observed often stopping and meeting at the north-west entrance to Russell Square.
- At peak hours, there is notable traffic congestion on the north side of Russell Square between the campus entrance and Bedford Way.
- The zebra crossing helpfully regulates the vehicle flow downstream from the intense traffic at Russell Square / Bedford Way junction.



Camera No.9 – Bus stand forcing car to overtake on the opposing lane.

Key Issues

- Variety and nature of activity in junction vicinity
- Vehicles overtaking parked buses crossing into opposing lane
- Congestion during peak hours.

Russell Square (west)

The flow and traffic on Russell Square West was not visible from the camera. However, site visits confirm that this road is well used by pedestrians, cycles and vehicles, including buses and a substantial number of coaches.

Coaches awaiting passengers at the British Museum and which haven't been able to park at Montague Place tend to park on Russell Square creating a 'wall' of coaches.



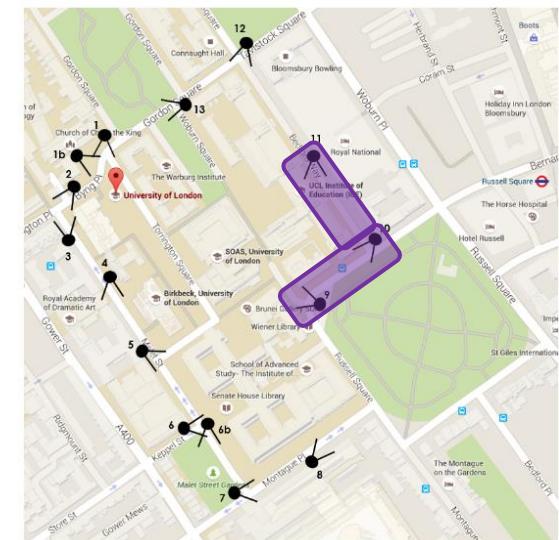
Coaches awaiting for passengers park at Russell Sq.

Video Footage & Analysis – Russell Square & Bedford Way

Camera No.10 – Observations

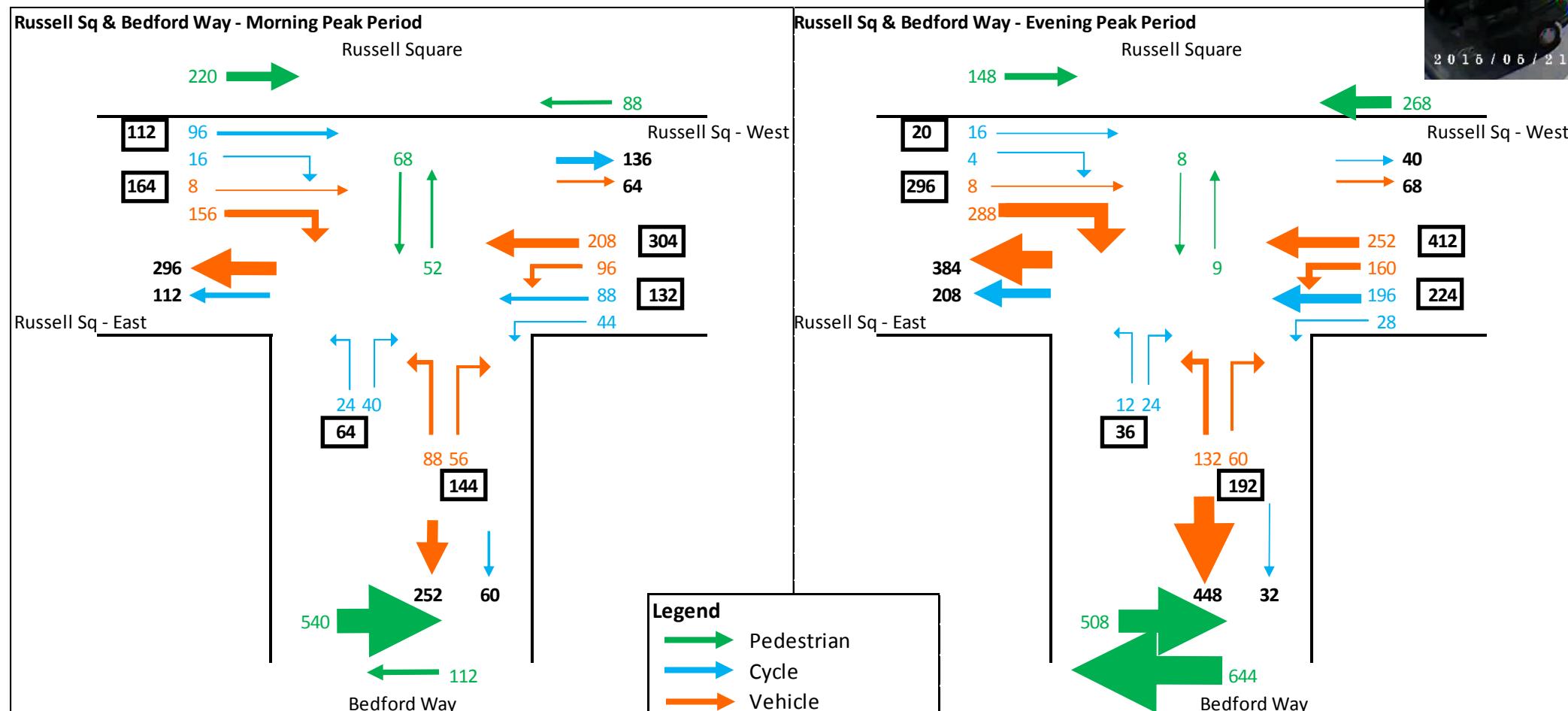
The Bedford Way and Russell Square junction is extremely busy and home to frequent congestion:

- Morning peak period: 18 pedestrians/min, 10 vehicles/min and 5 cyclists/min
- Evening peak period: 27 pedestrians/min, 15 vehicles/min and 5 cyclists/min.
- Cyclists travelling eastwards on Russell Square (north) crossing the Bedford Way junction have to avoid vehicles turning right into Bedford Way and vehicles (with reduced visibility) turning right from Bedford Way into Russell Square.
- There is traffic congestion at the Bedford Way / Russell Sq junction involving large vehicles especially buses and coaches.
- The proximity of the bus stop to the junction means buses have difficulty in re-joining the moving traffic resulting in the creation of a second eastwards traffic lane and the intensification of the traffic at the junction.



Key Issues

- Hazardous conditions for pedestrians and cyclists
- Traffic congestion and constrained carriageway

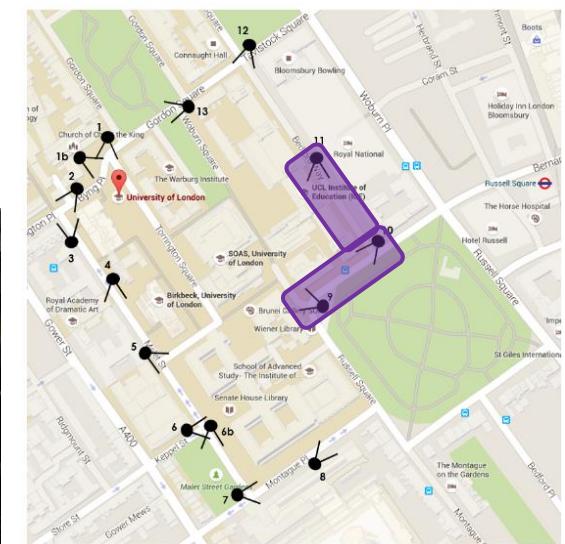


Camera No.11 – Traffic congestion

Video Footage & Analysis – Russell Square & Bedford Way

Camera No.11 – Observations

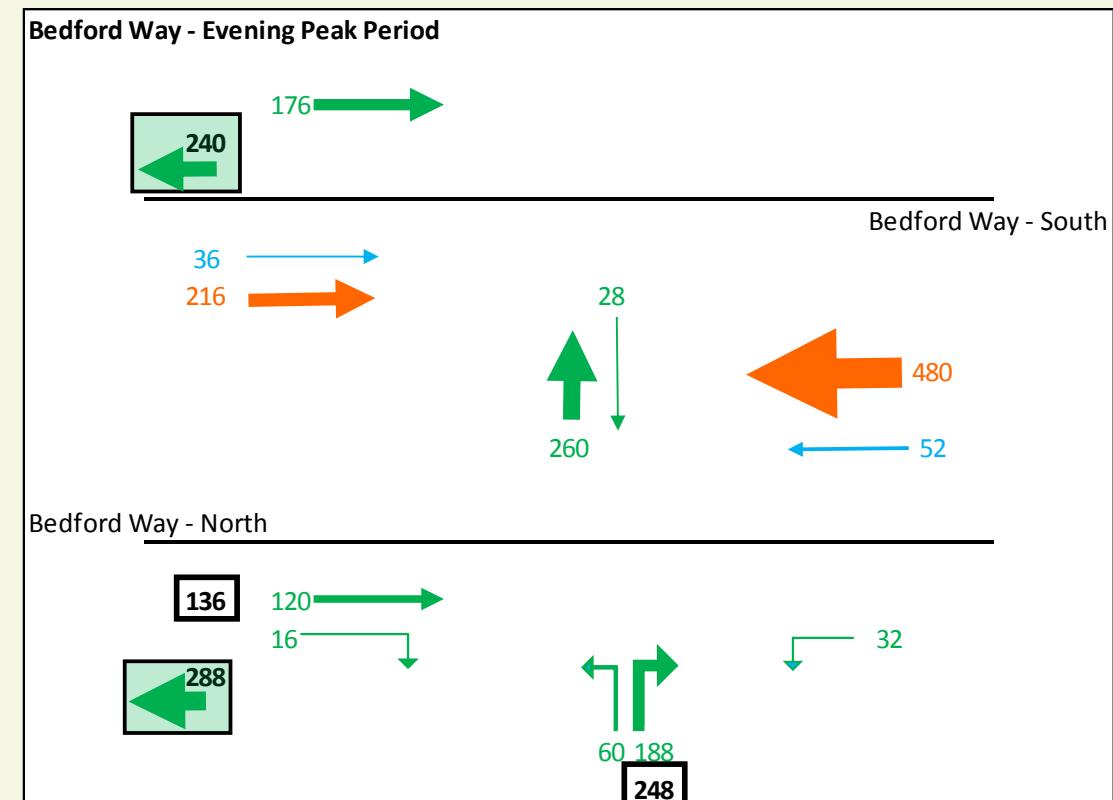
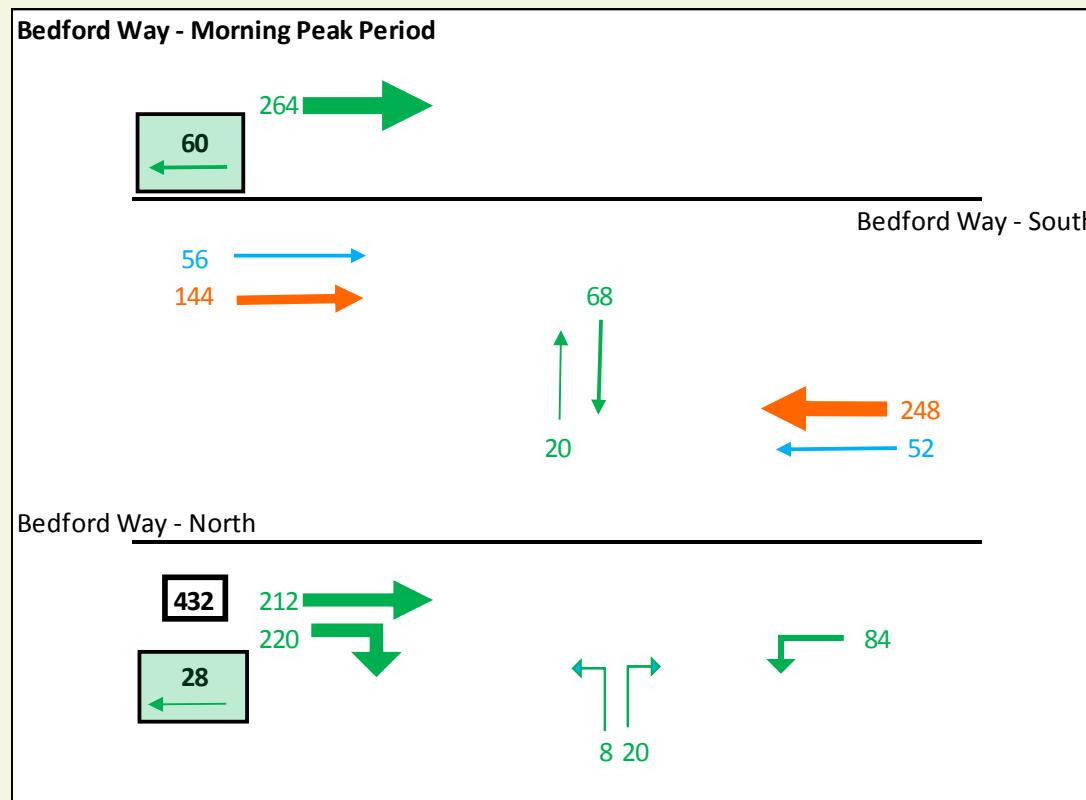
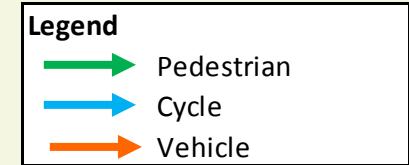
- o Coaches driving from the British Museum / from Bedford Way south cross the road in order to park on the other side where coach parking spaces are available.
- o A small number of cyclists have been seen riding on this road – 2 cyclists/min in the morning peak period and 2 cyclists/min in the evening peak period.
- o Coaches awaiting passengers at the British Museum and which haven't been able to park at Montague Place park here.



Camera No.11 – Coach from the British Museum parking on Bedford Way.

Observed Flows

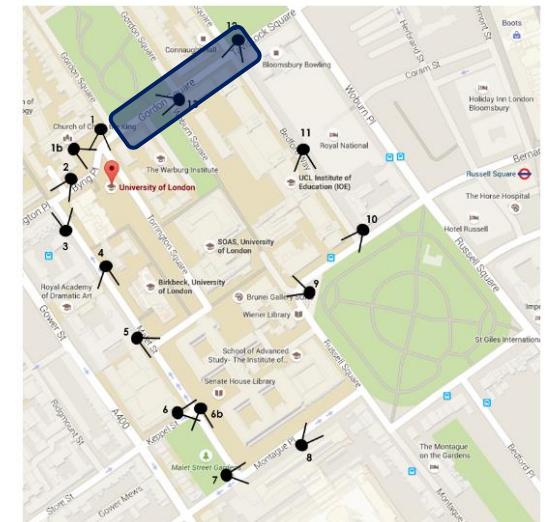
- o Bedford Way is lightly trafficked – particularly given its generous roadspace.
- o It is similarly unremarkable in terms of pedestrian and cyclist movements.



Video Footage & Analysis – Tavistock Square & Gordon Square

Camera No.12 and No.13 – Observations

- Vehicle and cyclist traffic is substantial and consequently, pedestrians rely on the zebra crossing and refuges to cross the road.
- The Gordon Square, Bedford Way, Tavistock Square junction is very busy during peak periods.
- The zebra crossing assists in regulating traffic flow and also cyclists exiting Woburn Square.
- The intense use of the zebra crossing contributes to moving traffic and at times, a more fluid traffic flow than may otherwise be the case.
- The cycle lane is so busy at peak hours that some cyclists appear to prefer to cycle on the carriageway alongside general traffic.
- Cyclists from Woburn Square have difficulties in accessing the segregated cycle lane owing to the high traffic volumes.
- Very few vehicles, pedestrians and cyclists pass through the Woburn Square / Gordon Square junction.



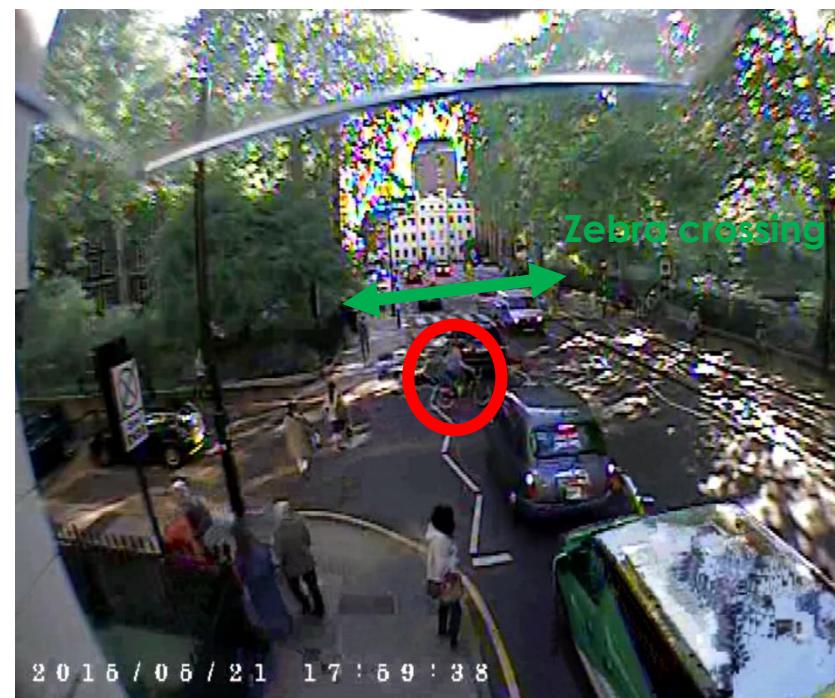
Note: The west side of Woburn Square isn't visible from the camera. However due to the location of the square and its symmetry, we may infer similar behaviour at that location too.

Key Issues

- Segregated cycle lane – access, use and effectiveness issues
- Pedestrians crossing the road with difficulty



Camera No.12 – Cyclists outside of the segregated cycle lane.



Camera No.13 – Zebra crossing regulating vehicle flow and facilitating cyclists exiting Woburn Square.

4. Results Summary & Opportunities

Results Summary & Opportunities

Byng Place – Torrington Place

- The 'Shared Space' on Byng Place underperforms with segregation remaining between the different user modes, particularly cyclists as they ride purposefully and at speed through the area.
- There is also an issue with cyclists riding on the carriageway instead of the segregated cycle lane as they can't reach it when coming from the adjacent streets (like Woburn Square, Torrington Square or Malet Street).
- The Torrington Place / Malet St junction is an area of intense activity between all users, and quite hazardous too.
- More people were seen walking through this area when the gate to UCL is open.

Extensive calming of this movement axis may well be beneficial – perhaps through extension of the Byng PI Shared Space eastwards and westwards to create a culture of calmed vehicular movements – effectively 'placemaking'. This could beneficially be extended to Malet St also.

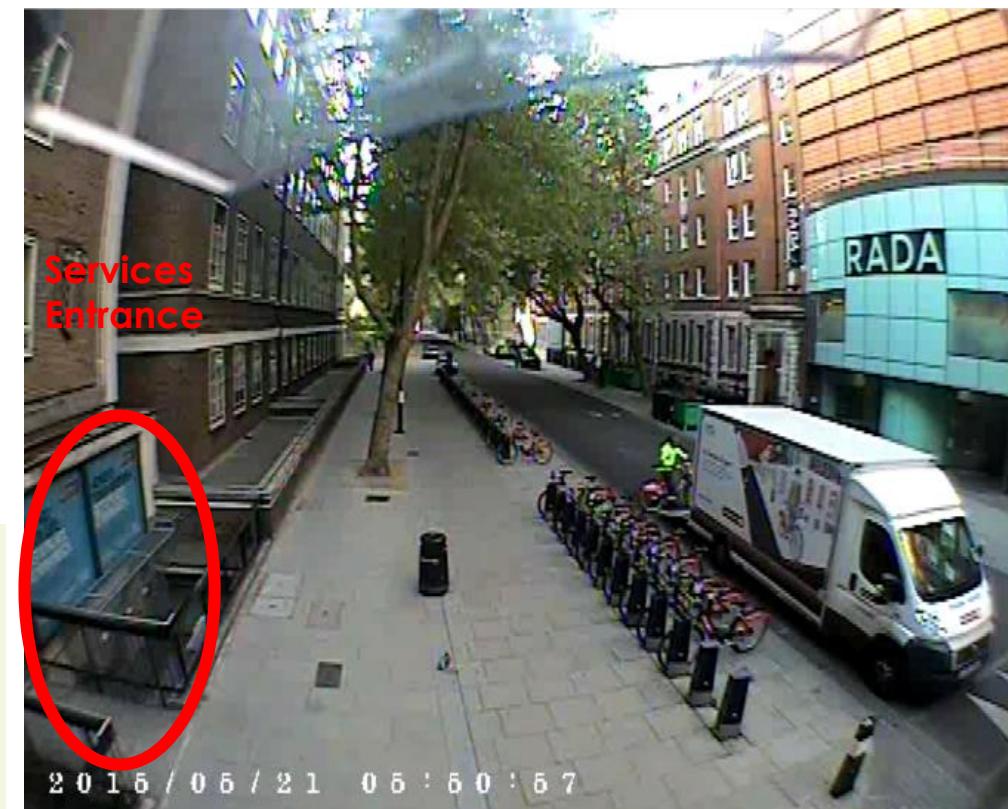


Malet Street

- Malet Street is a lightly trafficked road used mainly for service vehicles (e.g. courier, delivery, maintenance) – mostly linear pedestrian movement.
- Coaches have difficulty finding parking spaces to wait for their passengers.
- Malet St is currently a route more than a destination with very few people crossing the street or stopping for any time within it.
- Cyclists riding northbound from Malet Street (south) cross the carriageway and turning traffic in order to park in front of the Senate House entrance – a hazardous movement.
- Malet Street between Keppel Street and Montague Place is one-way southbound for vehicles but two-way for cyclists – this contra-flow sometimes creates hazardous conditions for northbound cyclists.

Our observations suggest that Malet Street (north of Keppel St) may be successfully removed from the wider road network.

Keppel St – Montague Place is a clear rat-run and there are likely benefits accruing from removing traffic from Keppel St, including the rationalisation of pedestrian / cyclist / vehicular traffic movements. However, the traffic management implications of this require further consideration.



Results Summary & Recommendations

Montague Place

- Montague Place is very busy and often congested during museum opening hours with a significant number of coaches parking in the street or picking up/dropping off passengers.
- If coaches can't find a place to park on Montague Place, they appear to head to Russell Square, Bedford Way or look back to Malet Street to find available parking space.
- Coach parking arrangements on Montague Place could be improved through further movement and parking management.

There appears to be an opportunity to close Keppel St to through traffic movements with that link's function replaced by Montague PI (west). Along with simplifying movements outside the Senate House entrance (particular for cyclists and pedestrians), this also offers the prospect of substantial public realm improvement on Keppel St, along the full length of Malet St, and Montague Place between Senate House and the British Museum.

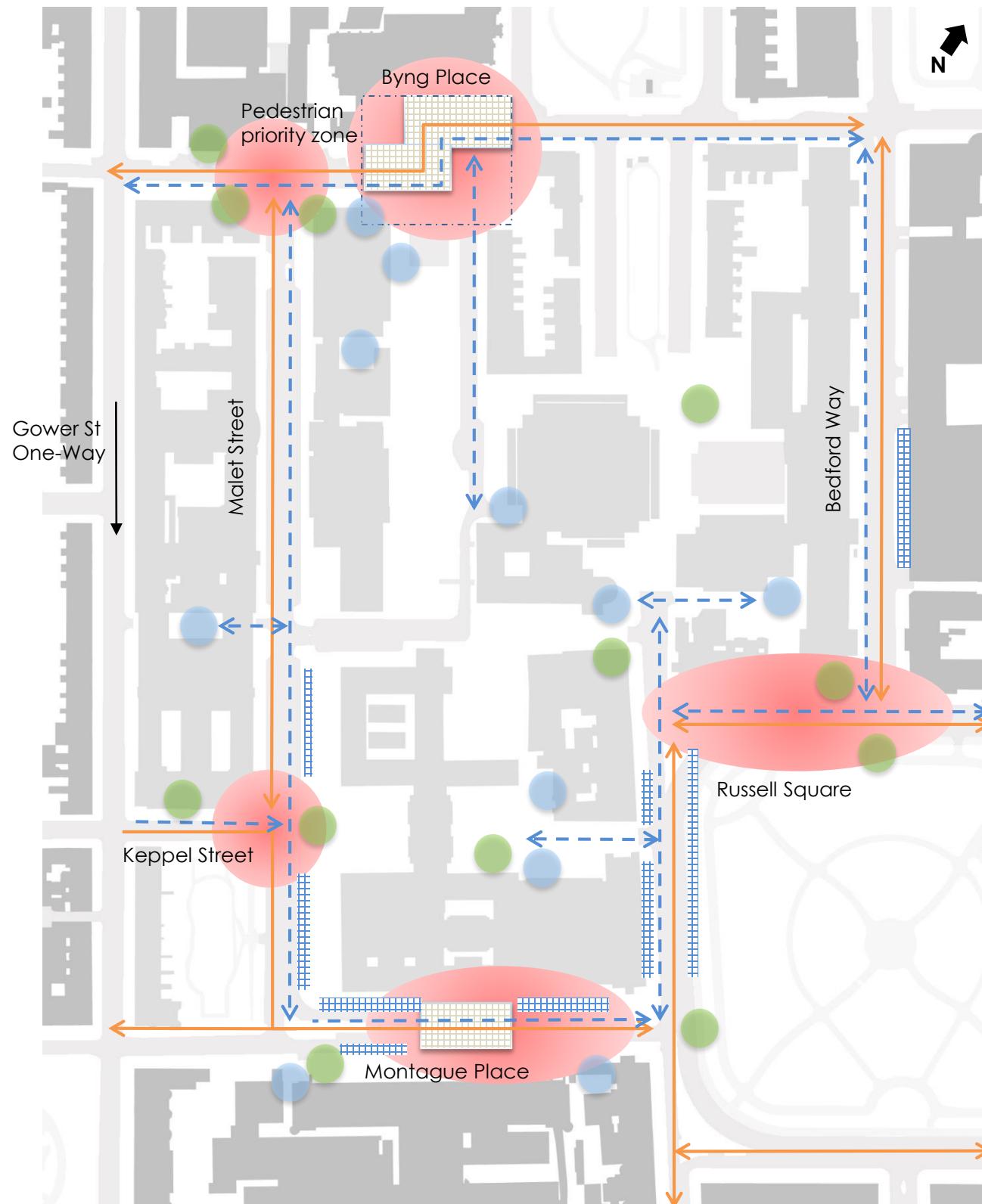
Bedford Way and Russell Square

- The intersection between Bedford Way and Russell Square is extremely busy and home to frequent congestion.
- Several bus routes run along Russell Square and this, along with the carriageway obstruction presented by the bus stand, means vehicles have to overtake and drive in the opposing lane – risking collision.
- At present, few pedestrians are attempting to cross the road at this intersection - however, with the anticipated increase in number of people on and around the site in future years, this could become a significant issue.

Similar to the Byng PI – Torrington PI movement axis, there is an apparent need and opportunity to encourage calmer and more considerate road user behaviour in the Russell Square (north), Bedford Way and Russell Square (west) area. Possible action may include rationalising bus facilities, parking arrangements, turning movements and facilitating pedestrian crossing movements. Such action may include public realm improvements to beneficial effect.



Summary – Current Situation



Byng Place – Torrington Place

- 'Shared Space' underperforms - segregation between users, particularly (high speed) cyclists
- Cyclists riding on the road i.e. not within segregated lane - can't reach lane from adjacent streets (e.g. Woburn Square)
- Torrington Place / Malet St junction - intense activity between all users

Malet Street

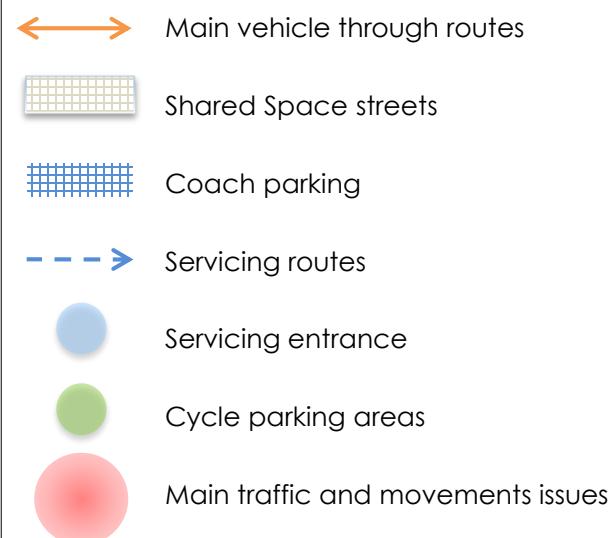
- Lightly trafficked road – servicing
- Mostly linear pedestrian movement
- Keppel St – Montague Place rat-run

Montague Place

- Montague Place very busy during Museum opening hours - coaches picking up/dropping off
- If can't park – head to Russell Square, Bedford Way or Malet Street to on-street spaces

Bedford Way and Russell Square

- Junction very busy - frequent congestion
- Bus routes and bus stand mean vehicles overtaking within opposing lane
- Some road crossing issues at present – would increase with more activity.



Results Summary & Recommendations

Pedestrian and Cyclist Movements

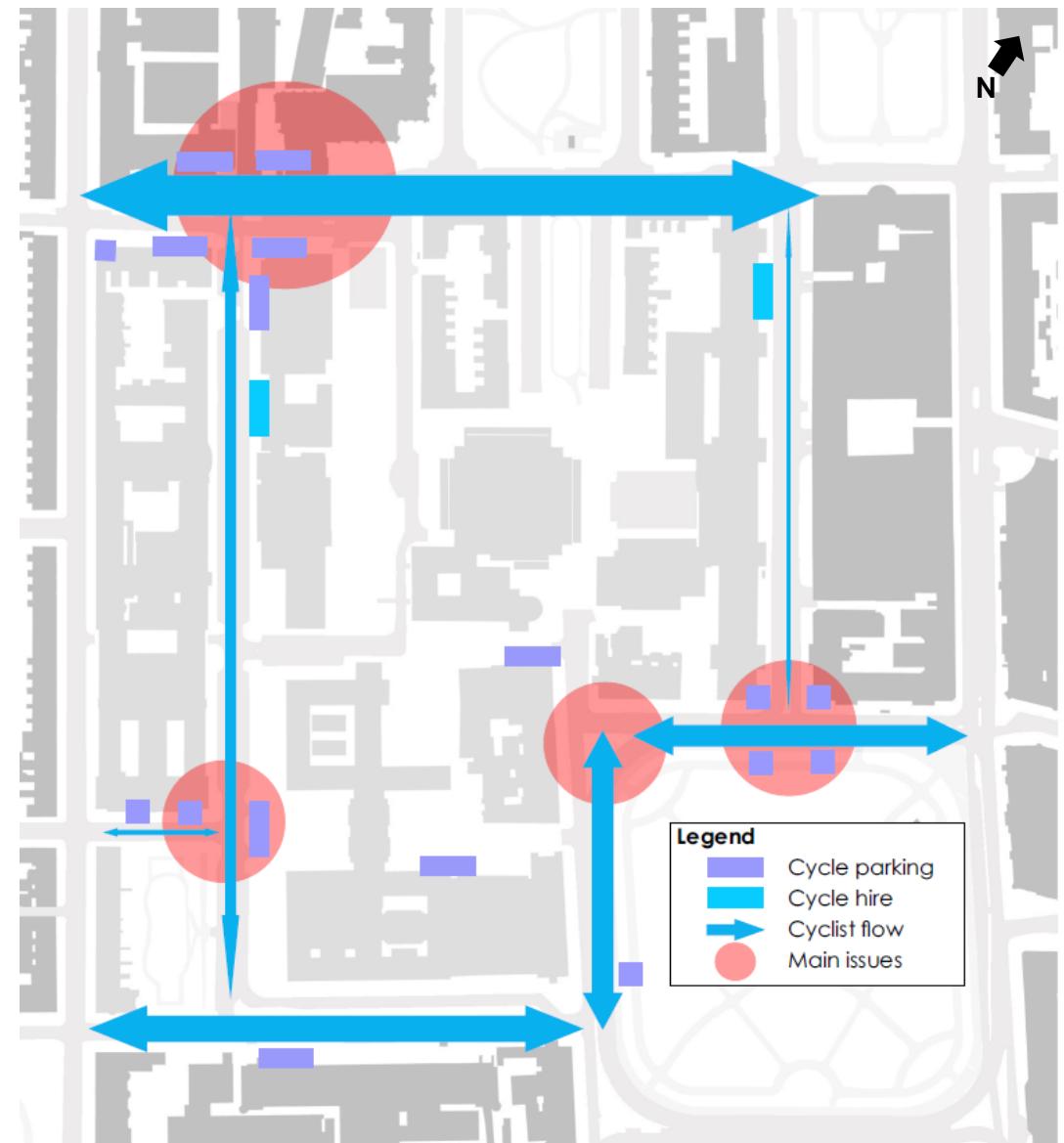
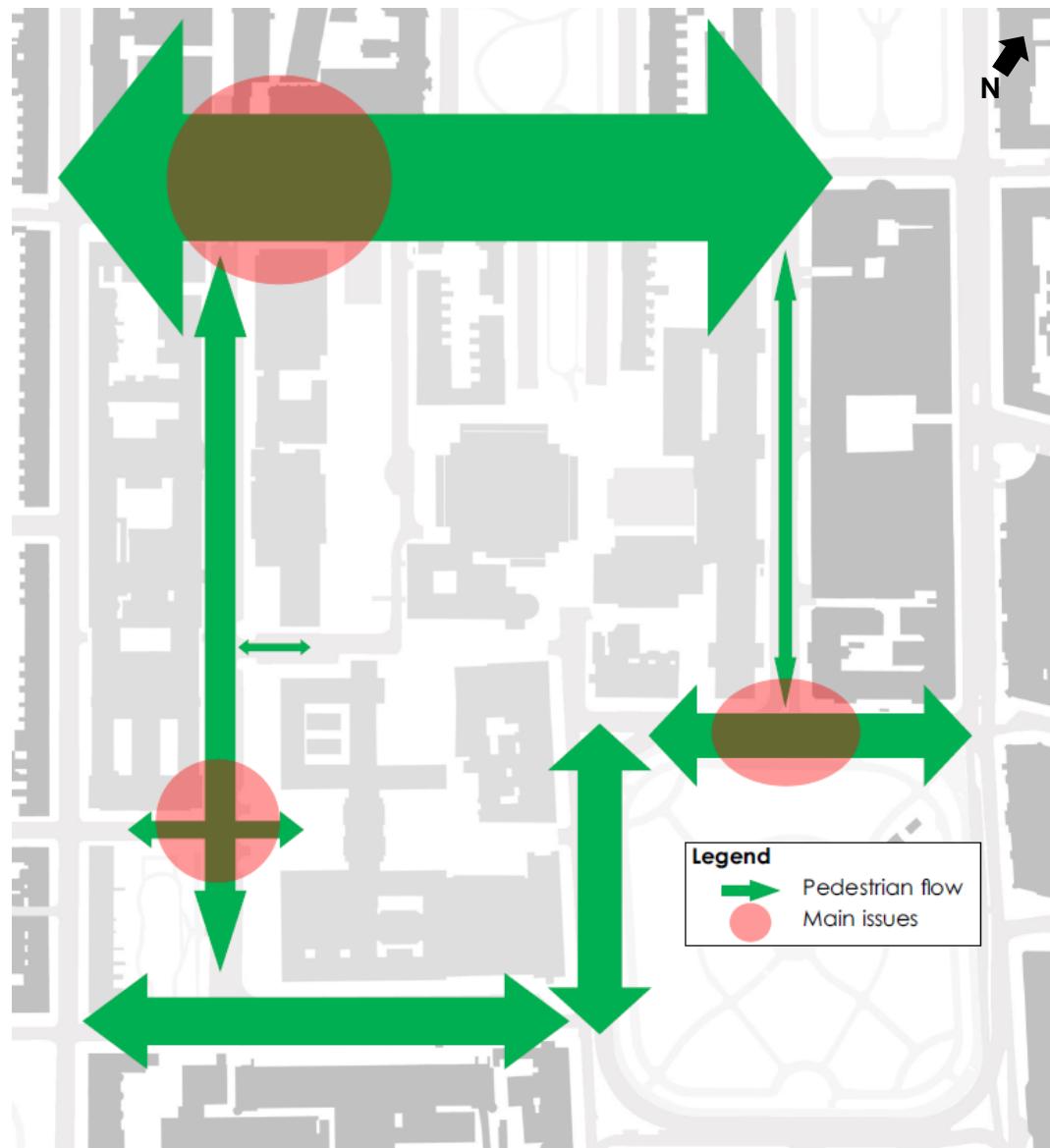
There is a substantial pedestrian flow in the area with Torrington Place, Byng Place, Montague Place and Russell Square being the busiest streets.

The 'hot spots' represent junctions where pedestrians encounter conflicts with others road users and difficulty in crossing the road. These issues need to be addressed in order to ensure pedestrians' safety and facilitate their movements.

Cyclists clearly use all the roads surrounding the campus with a clear emphasis on east-west movement. Cycle parking stands are also very well used.

It appears likely that action on integrating all movement needs yield considerable benefits to all users. Observations suggest that sensitively designed public realm improvements may do much to achieve a more harmonious and positive environment.

Present cycle parking facilities are clearly under pressure and would benefit from expansion. With an anticipated increase in student numbers and the completion of the West End project, there is a need to expand cycle parking provision substantially.



Results Summary & Recommendations

Observations have shown some clear patterns of movement and related possible opportunities for action.

○ Torrington Place – Byng Place – Gordon Square axis

Currently a confusion of movement and activity requiring rationalisation and calming.

Action: Consider an extension of Byng PI Shared Space, east and west to promote a culture of user street sharing.

○ Malet Street

Currently underused and largely redundant as a vehicular route.

Action: Consider removal of Malet St from the road network along its full length with related closure of Keppel St (movement relocated to Montague PI (west)). Provide an improved cyclist environment for northbound and southbound movement.

○ Montague Place

Currently a coach park for the majority of the day with overspill to adjacent roads – spoiling the appearance and function of the streetscape.

Action: Better manage coach parking facilities and function

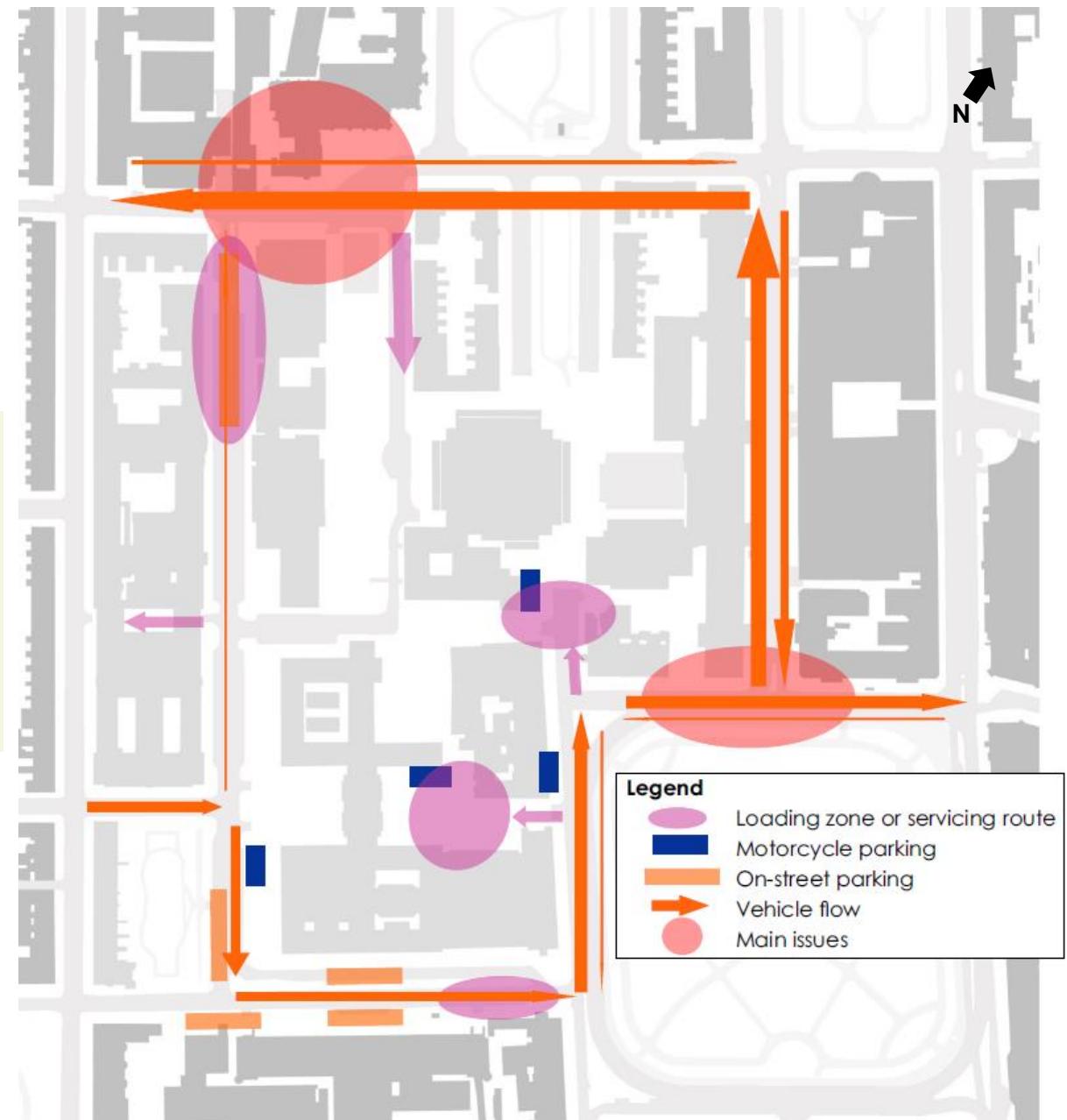
Explore opportunities for coach drop-off to minimise 'lay over' occurrence

Explore possibilities for supplementary consolidated coach parking remote from Montague Place.

○ Russell Square – west and north

Issues of congestion and mixed priorities for various users.

Action: Similar to the Byng Place axis, may benefit from a more ambiguous and calmer shared street environment. Requires a similar detailed focus on user needs, desire lines, safety and traffic management in developing public realm responses.

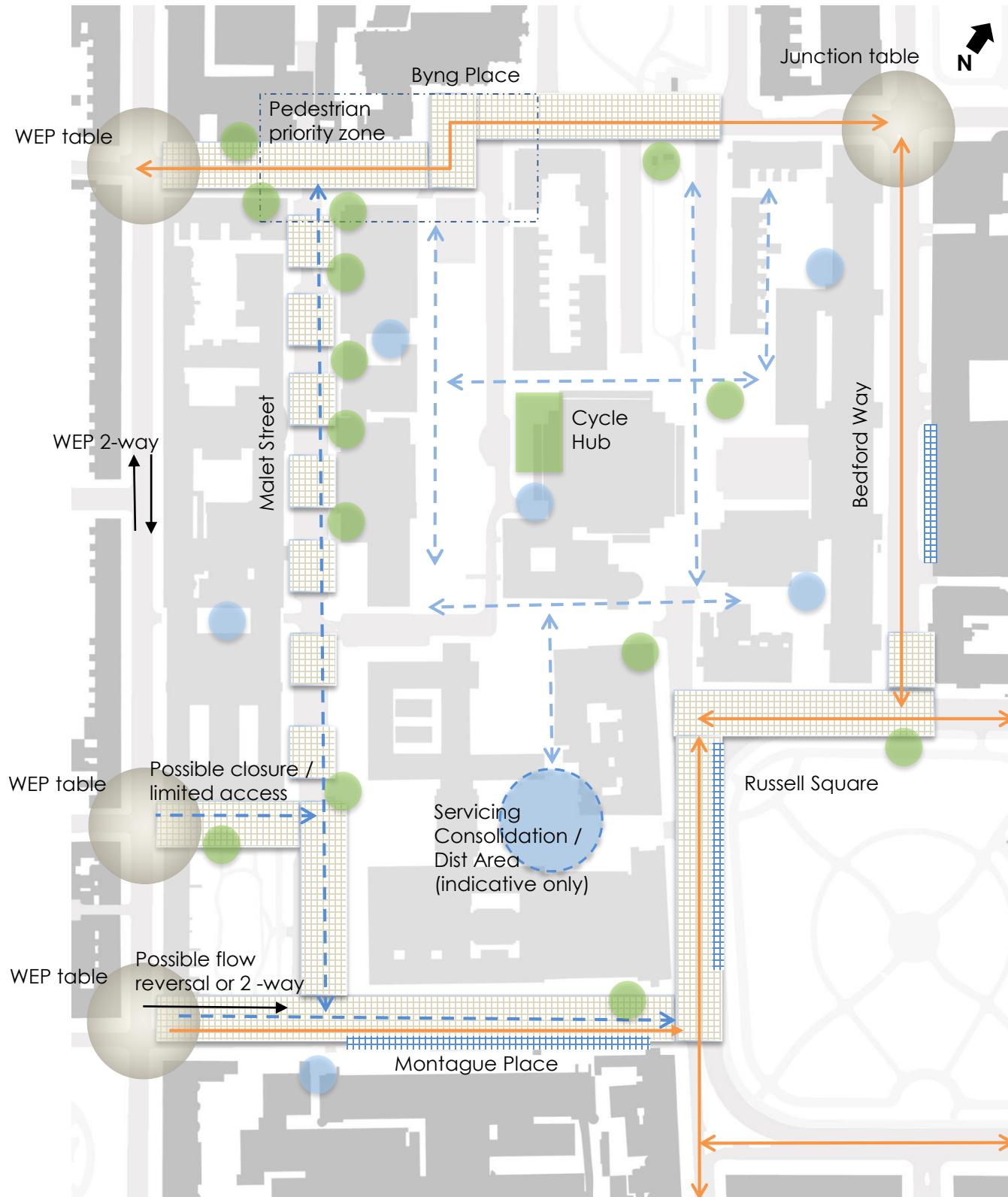


○ Servicing

Vehicles are mostly of small – medium size and found at a variety of locations during the course of the working day – not particularly problematic at any one location but not desirable either (e.g. Malet St).

Action: A system of servicing consolidation with goods break point within the campus could do much to minimise service vehicle movements in and around the site. Goods could be conveniently hand delivered / trolleyed to points within the campus.

Opportunities – Amended site access & movement network



Routes

- Malet St effectively removed from road network
- Keppel St closed to through traffic – Montague Pl (west) flow reversed or two-way
- Shared Space Streets for limited / calmed access only

Shared Space

- Byng Place principle extended across local roads
 - Extends shared street behaviour / culture
 - Sensitive design required
 - Cyclist interaction issues to be carefully considered
 - Design detail critical to function and performance

Servicing

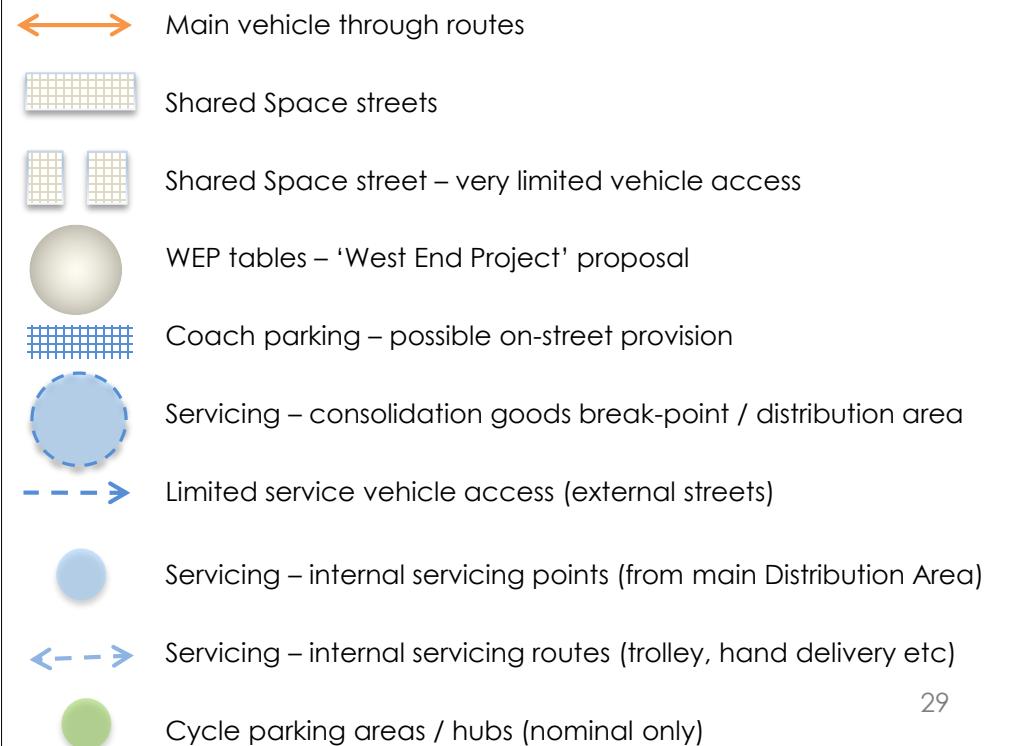
- Consolidation system / network assumed
- Internal goods movement facilitated
- Minimal (external) on-street provision

Coach Parking

- Assumes present coach parking capacity reduced in site vicinity and reprovided remotely elsewhere
- Proactive / staffed coach parking management
- Clearly demarcated provision

Cycling

- Cycle parking / hubs expanded substantially
- Shared Space streets encouraging cycling.



5. Next Steps

Next Steps

Development Access and Movement Strategy

The findings and suggestions for action have been based from a high level study of the site and environs. Various assumptions have been made throughout, e.g. coach parking relocation which require further detailed viability assessment.

Topics for further investigation to optimise arrangements for future development may be presented in a **Development Access and Movement Strategy** which would also contribute to the wider site development design process offering design inputs and advice, and assist in ongoing area development partnership working with Camden Council.

Calmer, Greener, Safer Streets

Objectives:

- To promote a high quality environment on streets around the campus
- To facilitate positive activities on surrounding streets
- To provide fully for a convenient and safe sustainable movement environment

Tasks:

- Traffic management implications of road / street functions in the wider network and options for change
- Develop proposals for Shared Space / Green streets and Gateways to better accommodate pedestrian/cyclist and motorised traffic movements
- Consideration of West End Project interface, impacts and complementary action
- Consideration of vehicular access needs and arrangements to minimise movements around and within the site
- Review and development of development related public realm proposals including liaison with public realm designers and council



Travel Plan / Smarter Travel

Objectives:

- To maximise movement by sustainable travel modes and minimise car use and parking provision
- To contribute fully to the University's forward-looking sustainable action

Tasks:

- Review present TP action – actions, effectiveness, future planned action
- Review needs in anticipation of University growth – estimate future cyclist numbers
- Develop strategy for cycle parking provision – define user needs and appropriate facilities
- Develop campus travel information system(s) – e.g. on-site 'real time' information.

Next Steps

Coach Movement Assessment

Objectives:

- To better identify and manage valid / necessary coach parking around the site – proposing alternative arrangements and locations as appropriate
- To release areas for alternative and positive University amenity use

Tasks:

- Comprehensive survey of existing coach movement activity
- Estimation future coach parking demand - liaise with British Museum
- Examine acceptable type and level of coach activity around the campus
- Explore possible coach parking action and arrangements to best manage coach parking activity
- Explore alternative coach parking locations remote from the campus.



Site Servicing Strategy

Objectives:

- To rationalise servicing activity in and around the site
- To substantially reduce servicing movements
- To develop a consolidate servicing system for the University working in partnership with the council

Tasks:

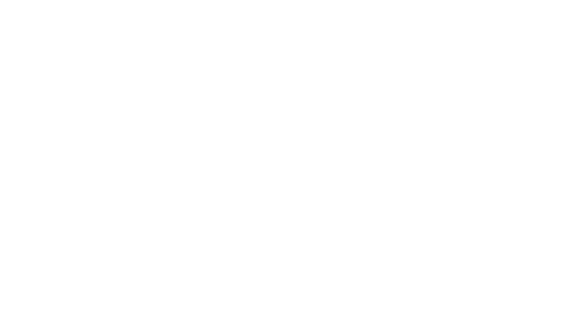
- Examine the prospect of a fully consolidated servicing system
 - Within London/Camden
 - Within the campus locality
 - Within the Campus grounds
- Assess the best break point for goods delivery
- Assess best internal servicing routes.



6. Appendices

Appendices

Camera Location No.1 to No.3

| 1.Byng Pl/ Torrington Sq | 1b.Byng Pl/ Torrington Sq | 2.Byng Pl/ Torrington Pl | 3.Malet St a) |
|--|--|---|---|
| <p>Lamp Post no.1 north Byng Place at the intersection with Gordon Square</p> <p>Looking South</p> <p>To capture vehicles and crossing pedestrians movements on the shared space (south to the Church of Christ the King)</p>  | <p>Lamp Post no.3 north Byng Place at the South West corner of the Church of Christ the King</p> <p>Looking South-East</p> <p>To capture the flow going into Torrington Square and movements on the shared place</p>  | <p>Lamp Post 100H5 with a CCTV Camera attached</p> <p>Looking South-East</p> <p>To capture movements at the intersection between Torrington Place, Byng Place and Malet Street</p>  | <p>Lamp Post (no number) on the west side of Malet Street</p> <p>Looking North</p> <p>To capture the flow in Malet Street and the movements at the intersection between Torrington Place, Byng Place and Malet Street</p> |
|   |   |   |   |

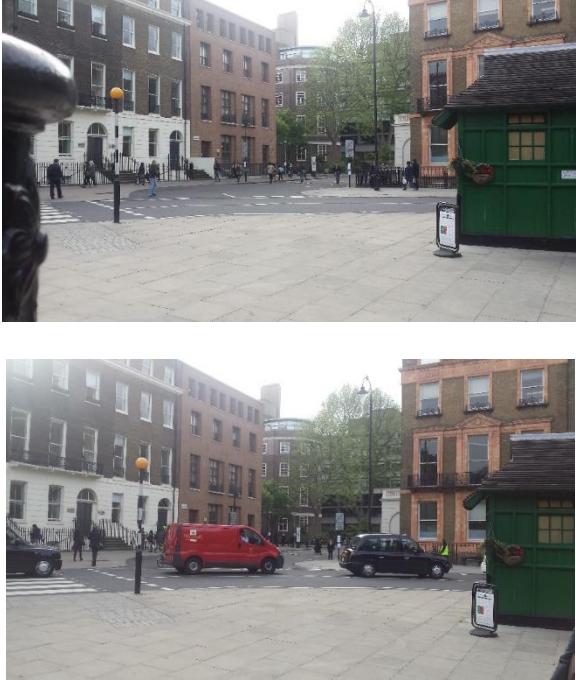
Appendices

Camera Location No.4 to No.6b

| 4.Malet t b) | 5.Malet St c) | 6.Keppel St/Senate Hs Entrance | 6b. Keppel St/Senate Hs Entrance |
|---|---|---|--|
| <p>Lamp Post (no number) on the east side of Malet Street</p> <p>Looking South</p> <p>To capture traffic flow and movements on Malet Street</p> | <p>Lamp Post (no number) on the west side of Malet Street</p> <p>Looking South</p> <p>To capture movements in Malet Street at one of the entrance of the campus</p>  | <p>Lamp Post no.1 on the north side of Keppel St, at the intersection of Keppel Street & Montague Pl</p> <p>Looking East towards the entrance of the Senate House</p> <p>To capture traffic flow coming from Keppel Street and others movements at the junction between Malet Street and Keppel Street</p>  | <p>Lamp Post (no number) located in the middle of the Senate House Entrance</p> <p>Looking South towards Malet St</p> <p>To capture movements on the south part of Malet Street</p>  |
|  |  |  |  |

Appendices

Camera Location No.7 to No.10

| 7.Malet St/Montague Pl | 8.Montague Place | 9.Russell Sq (campus entrance) | 10.Bedford Way/Russell Sq |
|---|--|---|--|
| <p>Lamp Post no.1 on the west side of Malet Street, at the intersection between Malet Street and Montague Place</p> <p>Looking East</p> <p>To capture coach traffic and movements at the junction between Malet Street and Montague Place.</p>  | <p>Lamp Post no.3 on the south side of Montague Place</p> <p>Looking North – East towards the intersection between Montague Place and Russell Square</p> <p>To capture junction movements at the intersection between Montague Place and Russell Square</p> <p>Note: this camera was relocated from intended position further east during its installation.</p> | <p>Lamp Post no.23 on the north-west corner of Russell Square</p> <p>Looking North-West towards the entrance of the Campus</p> <p>To capture pedestrian crossing movements as well as vehicles traffic at the entrance of the campus</p>  | <p>Lamp Post no.26 on the north side of Russell Square</p> <p>Looking West towards the intersection between Russell Square and Bedford Way</p> <p>To capture movements at the junction between Bedford Way and Russell Square</p>  |
|  |  |  |  |

Appendices

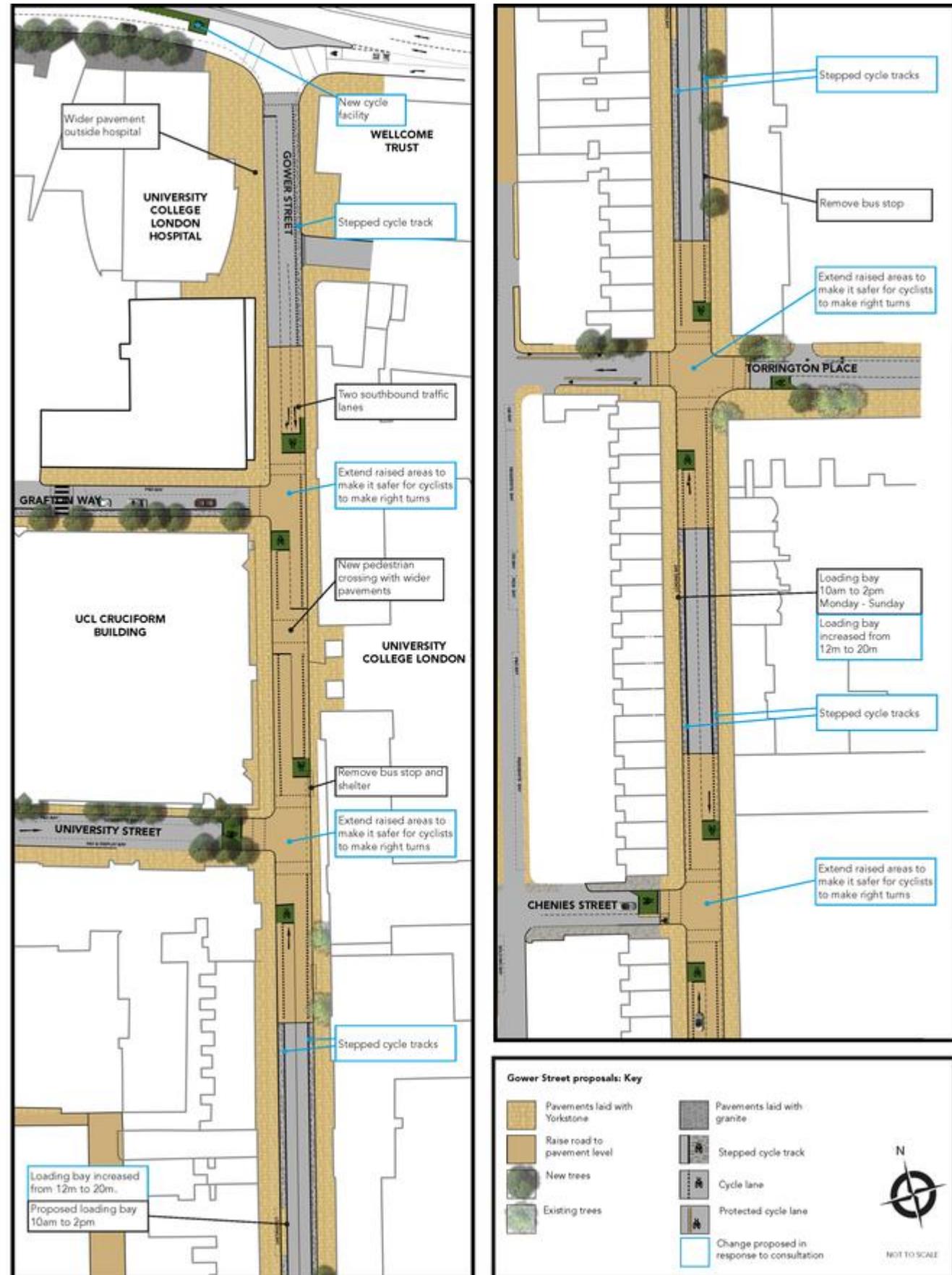
Camera Location No.11 to No.13

| 11. Bedford Way | 12. Bedford Way/Tavistock Sq | 13. Gordon Sq/Woburn Sq | / |
|---|--|---|---|
| <p>Lamp Post no.6 on the east side of Bedford Way</p> <p>Looking South into Bedford Way and the entrance to the UCL Institute</p> <p>To capture movements on Bedford Way</p>  | <p>Lamp Post no.6 on the north side of Tavistock Sq at the intersection between Bedford Way, Tavistock Square and Gordon Square</p> <p>Looking South-West towards the intersection between Bedford Way, Tavistock Square and Gordon Square</p> <p>To capture movements at the junction between Bedford Way, Tavistock Square and Gordon Square</p>  | <p>Lamp Post no. on the south side of Gordon Square, at the intersection with Woburn Square.</p> <p>Looking West towards the intersection between Gordon Square and Woburn Square.</p> <p>To capture vehicle and bicycle movements at the intersection between Gordon Square and Woburn Square and the pedestrian crossing of Gordon Square.</p>  | / |
|  |  |  | / |

Appendices

West End Project / Gower Street (North) Proposals

Two-way street for all traffic with protected cycle lanes between New Oxford Street and Grafton Way. No Parking at any time with loading only in signed bays

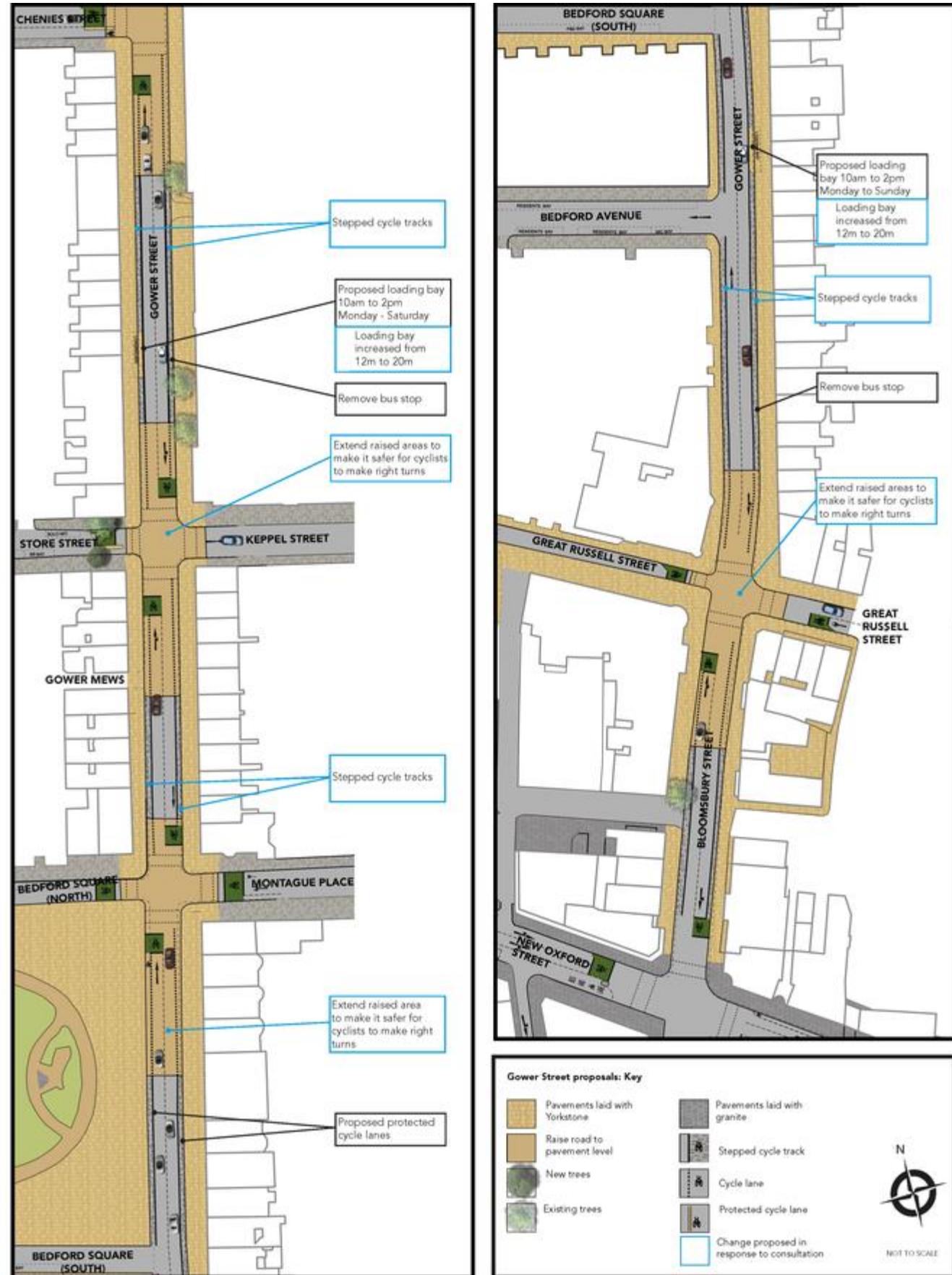


Source:
<https://www.wearecamden.org/westendproject/assets/images/gower-street-north-plan-2>

Appendices

West End Project / Gower Street (South) and Bloomsbury Street Proposals

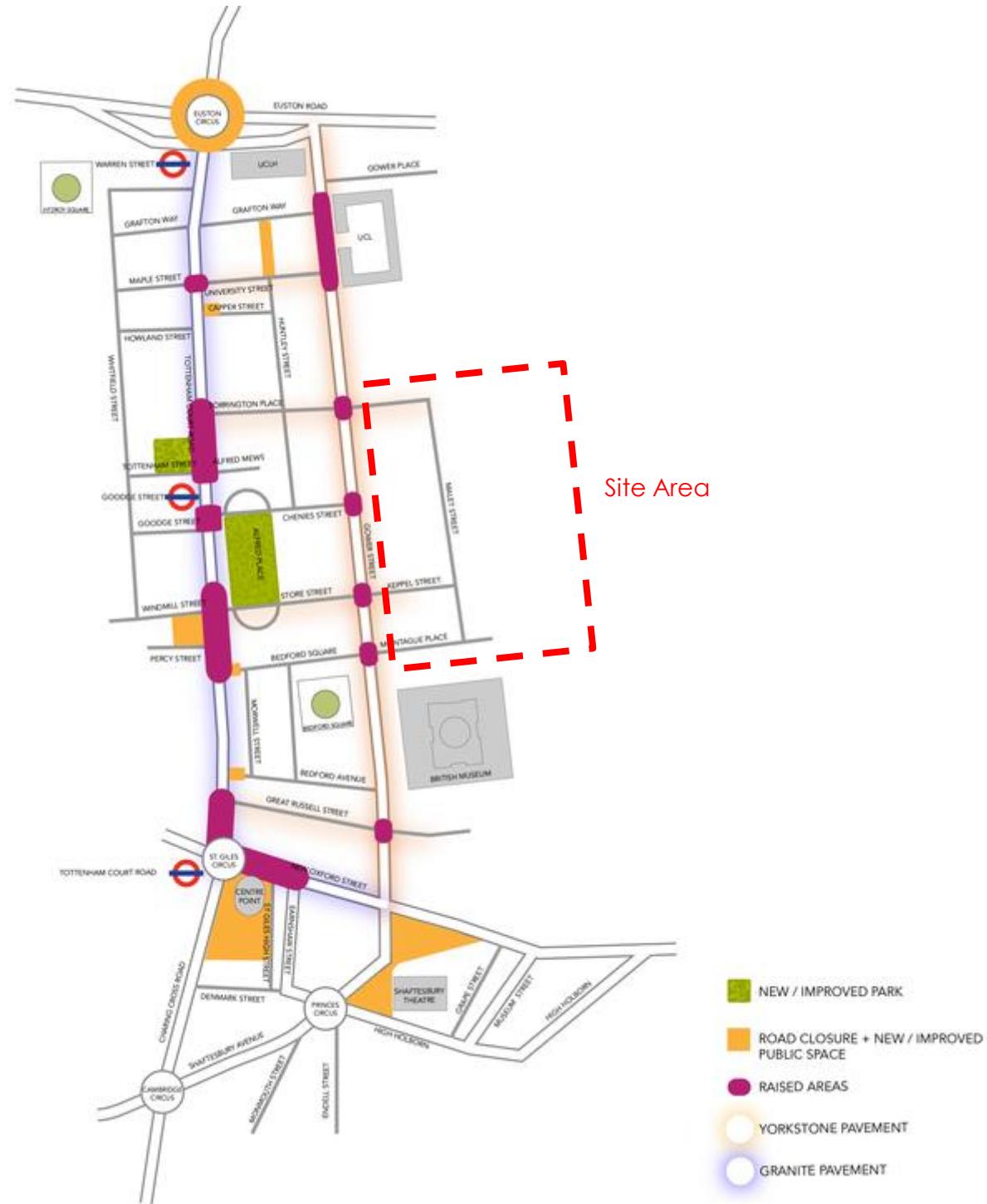
Two-way street for all traffic with protected cycle lanes between New Oxford Street and Grafton Way. No Parking at any time with loading only in signed bays



Source:
<https://www.wearecamden.org/westendproject/assets/images/bloomsbury-street-plan>

Appendices

West End Project – Pedestrian Improvements Map



Source: <https://www.wearecamden.org/westendproject/assets/images/urban-design-plan-2>

West End Project – Cycle Lane Improvements Map



Source: <https://www.wearecamden.org/westendproject/assets/images/cycling-plan>

| Quality Control | |
|-----------------|---------------------------|
| Primary Authors | Julie Guilhem |
| Contact Details | T: +44 (0) 20 7566 3452 |
| | M: +44 (0) 79 3579 2017 |
| | E: Julie@urban-flow.co.uk |
| Other Authors | John Emslie |
| Reviewer | John Emslie |

| Document Control | | |
|------------------|----------------|------------|
| Version | Recipient | Date |
| Version 1.1 | BDP Architects | 23/06/2015 |
| Version 1.1 | BDP Urbanism | 23/06/2015 |
| | | |
| | | |