Transport Planning & Highway Solutions

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No. 1b, St John's Wood Park, NW8

Erection of Single Two-Storey Dwelling with Basement

Construction Traffic Management Plan (CTMP)

September 2015

A report prepared on behalf of Mr M Ofori

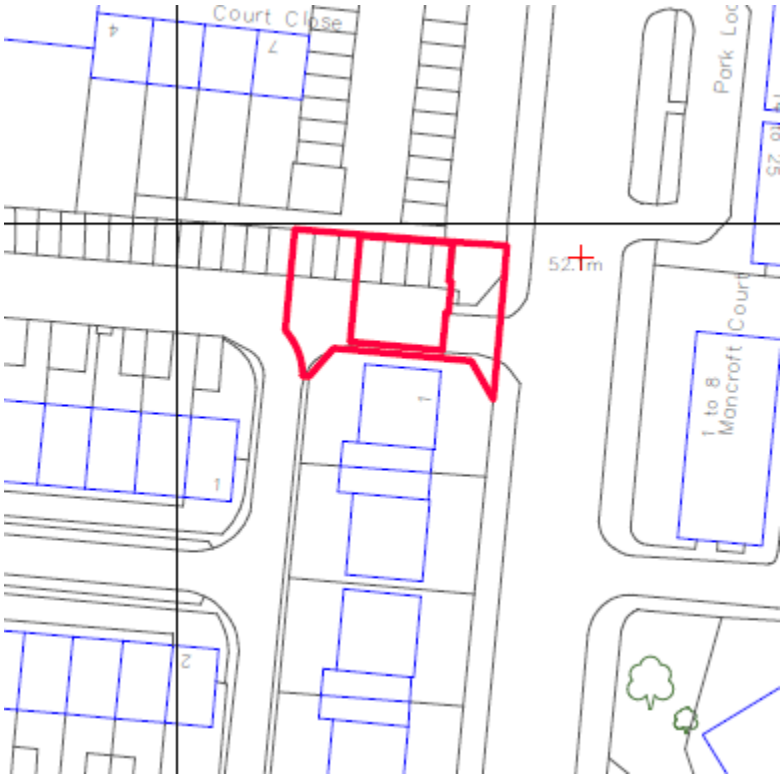
Contents

1 Introduction

1.1 Background

1.1.1 This document sets out the logistics and traffic management arrangements associated with construction of a single two-storey residential dwelling with basement provision and dormer roof space. This property would form No.1b St John's Wood Park within a residential area and be located approximately 150m south of the A41 Swiss Cottage gyratory.

1.1.2 The site of the construction project would occupy a plot which currently comprises the gated vehicular access running between St John's Wood Park and the set of garages at the northern end of Middlefield, to the immediate north of No.1 St John's Wood Park, land either side of this access, the easternmost seven of this set of garages and the access hardstanding in front of these. The general site area is shown on the OS extract below.



Plan 1: General Site Area

1.1.3 The sub-structure basement level within the new-build construction would extend across the majority of the site footprint, which measures around 350sqm., with the super-structure two-storey building unit with dormer roof space being set back from the site's eastern and western perimeters by around 5m and 7m respectively and with a corresponding footprint of around 170sqm.. The overall programme for the works has an anticipated duration of around twenty-four months (two years), with full completion anticipated by the end of 2017.

1.1.4 This programme includes the initial preliminaries and preparation phases, with a corresponding duration of around 1 month; the sub-structure (basement) works including the underpinning / retaining wall installation and subsequent excavation totalling around six months; the super-structure works including the flooring and internal walls totalling between ten and eleven months; and full fit-out and final decoration totalling six months.

1.1.5 This document accompanies the planning application for construction of a single two-storey residential dwelling with basement provision and dormer roof space, to form No.1b St John's Wood Park as an infill between No.1 St. John's Wood Park and development to the north. This is to provide the Council (London Borough of Camden – LBC) with the level of comfort that the impacts of the construction work have been assessed and as a control mechanism for the Contractor to use as a template to adhere to when constructing the scheme.

1.1.6 It should be noted that no contractor has been appointed at this planning stage but TPHS and the project team have significant experience and understanding of the logistics issues of this type of construction to be able to provide this initial report, which will be taken on board by the contractor and as necessary updated and enhanced with their own methods when they are appointed to undertake the works.

1.1.7 It is expected that this document is a live document to be updated by the contractor regularly to ensure conformity to good practice and considerate contractor principles to ensure minimum impact of the construction on the local area.

1.1.8 This version of the CTMP has been prepared based upon the information presented in the series of planning drawings prepared by Shaun Knight Architecture, with particular reference to the floor plans and elevation drawing, and the information presented in the Basement Impact Assessment reporting prepared by Croft Structural Engineers.

1.2 Structure of the CLP

1.2.1 Following this introductory section of the CLP, there are a further four sections contributing to this 'live' document. These sections are as follow:

- Section 2, '*Objectives and Benefits*', which details the overarching objectives of the implementation of the CTMP, the benefits which the CTMP shall support and the anticipated outputs of having implemented and maintained the CTMP.

- Section 3, '*Construction Programme & Phasing*', which considers the current anticipated different phases of construction, the anticipated vehicle activity and the role of local sourcing and consolidation to maximise efficiencies and reduce vehicle movements.

- Section 4, '*Construction Access Arrangements*', which details the access arrangements, routings and controls for vehicles and non-vehicle groups, as well as presenting an overview risk assessment for the access arrangements.

- Section 5, '*Monitoring & Review*', which outlines the roles and responsibilities of the key parties, both for the site and for the interface with other local bodies, as well as the form of monitoring to be adopted for particular work-related activities.

2 Objectives & Benefits

2.1 Objectives of the CLP

2.1.1 This Construction Traffic Management Plan (CTMP) provides a framework to support better management of all construction-related activity at the St John's Wood Park site, in particular considering how the impacts of the construction activity can be mitigated and lessened as they relate to movements to and from the site. In line with good practice, the overarching objectives of this CTMP are five-fold:

- Demonstrate how construction materials and construction waste will be delivered and removed safely, efficiently and sustainably respectively.

  This objective will be demonstrated by presenting details of the access and delivery layout arrangements for the site, the typical timetabling associated with the movement of materials and waste and the use of local material sourcing.

- Identify those deliveries which could be reduced, re-timed or consolidated, particularly during busy periods.

  This objective will be demonstrated by the use of local sourcing and consolidation, to reduce the number of vehicles likely to be travelling on the local highway network, as well presenting details of the pre-booking system which will seek to ensure that those operations which don't require peak hour travel will not travel at those times.

- Help cut congestion and ease any environmental pressures.

  This objective will be demonstrated by considering the potential reductions in typical vehicle movements that the use of local material sourcing and consolidation will support, of the role of the pre-booking system to maximise non-peak movement where practical to do so and of the staff travel strategy.

- Improve reliability of deliveries to the site.

  This objective will be demonstrated by presenting details of the routing strategy where these routes can be fixed and the pre-booking system which will support non-peak travel where practical to do so and efficiency in terms of access arrangements for the site.

- Reduce the fuel costs of the freight operators.

  This objective will be demonstrated again by considering in particular the role of local sourcing and consolidation in reducing vehicle movements, as well as the types of vehicles which will best support the scope to minimise vehicle movements to and from the site.

2.2 Benefits of the CTMP

2.2.1 This document, whilst working towards supporting the broad objectives, seeks to provide benefits to a number of key groups: the London Borough of Camden and its residents, particularly residents in St John's Wood Park and surrounding streets, the site works contractor and the individual freight operators and suppliers engaged with the contractor.

2.2.2 These benefits will come forward by means of facilitating a well-managed construction site, a managed access strategy and the managed movement of construction materials.

2.2.3 As a result of the measures which will be brought forward to support the broad objectives, it is anticipated that the general public in the local area, residents and businesses, and the local planning and highway authorities, will benefit from:

- less congestion on the local highway network;
- reduced emissions to limit the environmental impacts relating to freight movement;
- reduced risk of collisions (vehicle-vehicle and vehicle-pedestrian);
- no additional traffic and parking enforcement costs;
- sustained quality of life for local residents, workers and visitors.

2.2.4 Similarly, as a result of the measures which will be brought forward to support the objectives, it is anticipated that the site works contractor and the supporting freight operators and suppliers will benefit from:

- reduced vehicle delivery costs, through more reliable deliveries and less disruption to the construction programme;
- time savings by identifying local sources for materials and consolidation, as well as through operating a pre-booking system for vehicle movements;
- avoidance of risk of penalty charges through provision of a defined and dedicated area for the purpose of loading and unloading of goods and materials;
- fuel savings through reduced vehicle movements and timed deliveries;
- increased certainty over delivery times allowing better route and day planning;
- reduced risk of collisions involving vehicle fleet with appropriate specifications.

2.2.5 These benefits will arise from a number of measures, but in particular underpinned by the local sourcing of staff and materials as appropriate, the consolidation of pick-up and deliveries at the site, the use of a pre-booking system to maximise those movements which can be undertaken outside of the peaks, appropriate access and arrangements for the loading and unloading of vehicles, the identification of vehicle routing strategies and the implementation of a staff travel policy.

2.3 Anticipated Outputs of the CTMP

2.3.1 This is a 'live' document. As such, it is anticipated that as a contractor is appointed by the client to undertake the works they will update and refine this document and submit this to the planners at LB Camden to update any specific details that they consider would enhance this plan and update any working methodology to align with the general practices outlined to achieve the program; otherwise, they will confirm that there are no material changes.

2.3.2 Also, as the construction programme progresses this CLP will be regularly reviewed prior to key work stages and updated accordingly if required, to ensure that the measures and strategies put forward for implementation at this stage continue to be those most appropriate to balance the needs of the contractor to deliver the development in a timely and costly manner and the needs to support the local community and the environment in reducing and mitigating the construction impacts.

2.3.3 Specifically, it is anticipated that the CLP will deliver the following:

- maximisation of the number of vehicles to be removed from the highway network as a result of the consolidation of materials and goods and the use of larger-sized vehicles;
- maximisation of the number of vehicles to be travelling locally only as a result of sourcing specific materials directly from local suppliers, where consolidation not viable;
- removal of the likelihood of construction vehicles waiting inappropriately on-street as a result of dedicated arrangements for loading / unloading and the pre-booking system;
- maximisation of non-peak movements and minimisation of peak movements, by having those not needing to deliver during the peak hours restricted to the non-peak periods;
- minimisation of staff travel by private vehicle by virtue of the car parking strategy associated with the site and the obligation of contractor staff to use non-car modes.

3 Construction Programme & Phasing

3.1 Summary Programme

3.1.1 The current programme for the construction works, including full fit-out, is anticipated to run from around the start of 2016 through to the end of 2016 inclusive, subject to planning. This is an overall period of 24 months (two years) based on the delivery of the construction of a single two-storey residential dwelling with basement provision and dormer roof space.

3.1.2 The main construction works programme comprises four key stages: administrative and preparatory works prior to excavation, excavation and sub-structure works including steel erection and piling / concrete works, super-structure works similarly including steel and concrete works, and the full fit-out and final decoration works leading to sign-off.

3.2 Phasing Details

3.2.1 As referenced in relation to the summary programme, the main construction works at the site would comprise a number of distinct stages. It is currently planned that the full development will be built over a period of approximately twenty-four months through to final fit-out and sign-off, with the initial enabling works planned and anticipated to commence around January 2016.

Phase 1 – Administrative & Preparatory Works

3.2.2 During this first phase, the initial site set-up to install the contractors' equipment, welfare facilities, erecting of hoardings and general preparation of the site would be undertaken and with this having a duration of approximately 4 weeks. This would also involve deliveries of plant and equipment by smaller HGV vehicles or box vans daily and several trips per day.

3.2.3 Also, it will be during this initial phase that a number of administrative tasks would be undertaken, such as the application for licences and/or orders as appropriate but only for those required at that stage. Over the course of the project such licences / orders may relate to matters such as hoarding installation, installation of overhead gantry over the public footway, placement of storage receptacles on-street and parking suspensions.

Phase 2 – Excavation & Sub-Structure Works

3.2.4 The next phase of work would be to install the retaining wall around the perimeter of the site build area as a series of underpinned sections, so as to provide the support to allow the basement excavation to follow and not to have the excavations fall in. Installation of the contiguous piled wall would take approximately 12 weeks (three months) and require, as an estimate, around 250 cubic metres of concrete as well as the corresponding steel columns.

3.2.5 Following completion of the underpinning and retaining wall works, with the casting of the capping beams, steel work would be installed progressively across the ground floor level, which would prop the external perimeter of the basement within the end-state build. Excavation can commence once the steelwork has been set up.

3.2.6 The basement construction methodology would allow for retention of an opening sufficiently sized to provide access for machinery and spoil removal during the subsequent excavation and it is considered that there would be scope to undertake the steel work and excavation in sections from west to east so as to maintain also sufficient space on-site for the construction vehicles for between half and two-thirds of the basement works.

3.2.7 The excavation to form the basement area extending across the majority of the site would require the removal of around 2,250 cubic metres of material. The excavation would be undertaken by standard excavation equipment, the transhipment of which to and from the site would be undertaken using standard-sized vehicles as appropriate to reflect the local highway network constraints. This work would again take around 12 weeks (three months).

Phase 3 – Super-Structure Works

3.2.8 The next phase of work would be to complete any outstanding steel works at the basement / ground floor interface, followed by the installation of the metal deck which would form the ground floor flooring within the super-structure and the installation of reinforced concrete slab both to the front (east) and rear (west) of the site to form hardstanding above the sections of the basement which would not sit under the super-structure.

3.2.9 The metal deck and the reinforced concrete slabs would cover similar areas of around 170sqm.. Prior to the steel beams and other metal work being brought to the site, the site contractor would confirm with the supplier the maximum lengths of these based on the largest typical vehicle able to regularly access the site; if at all required, these would be delivered in section and fabricated on site, subject to agreement with a qualified engineer. The concrete volume required for the slabs would be around 100 cubic metres.

3.2.10 The structural work at the basement / ground floor interface and the installation of the permanent ground floor decking and slabs would take around ten weeks (two and a half months) to complete, with some potential overlap with the preceding sub-structure works.

3.2.11 Following on from these initial works during this phase, the work would move on to the building the two-storey super-structure upwards from ground floor level and then the additional dormer roof level, with the installation of the intervening ground-to-first and first-to-roof dormer floors, envisaged again to be based on metal deck structures and of the internal walls at each level within the new-build structure. In addition to the shell and core works, this phase would include further works to the external facades and to the roof level.

3.2.12 The core works within this super-structure build phase would take around a further thirty-two weeks (eight months), with the potential scope for some overlap with the subsequent full fit-out and final decoration works.

Phase 4 – Full Fit-Out & Final Decoration

3.2.13 Following on from the core construction works of both the sub-structure and the super-structure there would be final phase of full fit-out and decoration, including making good the groundworks, installing damp proof course, plastering and decoration of each floors, installing the internal services and having these connected to the external supplies.

3.2.14 This subsequent full fit-out and final decoration phase of work would have an overall duration of around twenty-six weeks (six months).

Summary

3.2.15 The following table provides an approximate breakdown of the two-year (twenty-four months) construction programme for the site, defining the key work stages in sequence and by approximate duration, again against the current timeframe of preparation and enabling works commencing January 2016 (Week 1) and with final fit-out by around November / December 2017 (Week 96), depending upon the start date. This construction programme is based on the routing and access strategy, as discussed further in later sections of the CTMP.

Activity	Approx. Works Period (weeks)
Site Set-Up	Weeks 1 - 4
Underpinning / retaining wall installation	Weeks 5 – 16
Basement excavation	Weeks 17 - 28
Ground floor structural works	Weeks 29 - 38
Main super-structure works	Weeks 39 - 70
Full fit-out and final decoration	Weeks 71 - 96
Site handover	*Week 97*

Table 3.1: Construction Programme Summary

3.2.16 In summary, the route for construction vehicles accessing the site would be from and to the A41 Swiss Cottage gyratory, thus upon the approach travelling along a clockwise route using the A41 south of Swiss Cottage, Boundary Road and St John's Wood Park and then upon the exit continuing along St John's Wood Park to connect with the Swiss Cottage gyratory. This routing strategy would be applicable for all construction material deliveries and removals.

3.2.17 This route will access a temporary waste storage area behind the footway within the site hoarding line, with the vehicle either utilising space on-site similarly within the hoarded area or utilising the kerbside space / footway directly in front of the site for the purpose of loading and unloading, depending upon the construction phase of the works.

3.2.18 There would be additionally the scope for smaller-sized vehicles to access the rear of the site by means of Middlefield, from and to Boundary Road, subject to the management of existing traffic and parking demands along this private road during the construction programme, so this would be brought forward as a secondary aspect of the routing strategy for the site.

3.3 Phasing Vehicle Activity

3.3.1 Based on experience of vehicular activity at other comparable and similar sites that TPHS have been involved with, the following table provides details of the week-by-week construction vehicles through to the end of the two-year programme. This information has then been disaggregated by construction activity, with the vehicles related to each activity being classified as either HGVs or LGVs.

3.3.2 For activities using HGVs the largest vehicles regularly used would be a 15-tonne tipper or equivalent and 6 cubic metre concrete lorry, particularly during the sub-structure phase of work, whilst for activities using LGVs the largest vehicles regularly used will be a 7.5t box van and smaller Transit-type vans, particularly during the fit-out phase of work.

3.3.3 The delivery of certain materials, such as the steel and metal work, and equipment, such as the mechanical digger and scaffolding, may require the occasional use of HGVs marginally greater in length than the regular tipper and concrete lorry. Such occasional access should also be feasible given that the access route is regularly used by similar size refuse vehicles, but due care and attention would be undertaken when having such vehicles access the site.

3.3.4 The figures presented in the following table, firstly in terms of weekly vehicles, have been extrapolated into equivalent daily and hourly vehicle numbers, based on weekday working only and the implementation of a pre-booking system to regularise access.

PERIOD	Weekly VEHICLES*		DAILY VEHICLES*		HOURLY VEHICLES*	
	HGVs	LGVs	HGVs	LGVs	HGVs	LGVs
Weeks 1-4	5	15	1	3	<1	<1
Weeks 5- 16	15	15	3	3	<1	<1
Weeks 17-28	20-25	15-20	4-5	3-4	<1	<1
Weeks 29-38	15	15	3	3	<1	<1
Week 39-70	10	20	2	4	<1	<1
Week 71-96	5	25	1	5	<1	<1

** Note: These figures equate to the construction vehicles accessing the site, for which each vehicle would have a corresponding arrival movement and departure movement.*

Table 3.2: Construction Vehicle Activity Summary

3.3.5 Overall two-way movements for the site would equate to double these figures as for each vehicle there would be an arrival movement and departure movement, though due to the one-way nature of the routing strategy from and to the A41 Swiss Cottage gyratory there would not be both an arrival movement and a departure movement on the same stretch of the local network of Boundary Road and St John's Wood Park, other than for a number of smaller-sized vehicles which may use Middlefield and thus in both directions.

3.3.6 Details provided for the most-intensive period of construction activity associated with the site, that during the first part of the programme in relation to the sub-structure works and peaking with the excavation activity, have been based on estimates of material volumes both coming onto the site (concrete and metal work) and leaving from the site (spoil), which have been built upon the greater detail available for these works from the planning material.

3.3.7 The information put forward for the subsequent construction phases correspond to projections based on current known information and experience from other comparable sites, but which would be reviewed at a later stage as part of a periodic review of the CTMP as works progress on the site and move from the sub-structure to the super-structure works.

3.3.8 The use of the medium-sized tipper (or equivalent) and the standard-sized concrete mixer vehicle are put forward in lieu of the smaller-sized equivalents of these to minimise vehicle numbers travelling to and from the site and thus the overall programme duration. Additionally, the contractor would be encouraged to maximise the use of the 7.5t box van vehicle instead of smaller-sized Transit-type vans, if the loading can reduce vehicle numbers.

3.3.9 Within the 'busy' period, peaking during the basement excavation programmed to run between weeks 17 to 28, the peak daily number of vehicles would be typically no more than nine vehicles (split between 5 HGVs and 4 LGVs), which is of a magnitude which has been seen on other sites undertaking similar works. These numbers can be managed and controlled such that the bunching of these vehicles when arriving can be avoided by means of constant communication with vehicle drivers and a stringent pre-booking system.

3.3.10 Additionally, there would be a requirement to operate the spoil removal on a timed basis, due to the scope for part of the basement excavation to be supported potentially by means of on-site loading, so as to ensure that these HGV tipper (or equivalent) lorries do not overlap. It should be noted that these estimates could be higher than the final requirements, as there may be scope to fully maximise loadings for each movement.

3.3.11 The majority of vehicles during this period, during which around 2,250 cubic metres (around 3,250 tonnes) of spoil material would be removed as a result of the basement excavation, would be medium-sized tippers (or equivalent), estimated as three to four vehicles each day over the course of a 12-week period and with each vehicle having up to 15 tonne capacity. This is based on a five-day working week and thus an overall total of sixty working days.

3.3.12 In terms of other vehicle types and volumes associated with the distinct construction activity stages at the site, these would comprise:

- during initial site set-up (weeks 1 to 4) the deliveries of plant and equipment would be undertaken on a daily basis, several times a day, primarily using LGVs such as box vans but with occasional smaller-sized HGVs;

- during the underpinning / retaining wall installation (weeks 5 to 16) there would be at the start the delivery of a small piling rig and other bespoke equipment as required, but then followed by regular concrete deliveries by 6 cubic metre lorries and corresponding steel / metal work deliveries to install the retaining wall, with these resulting in up to three HGVs on a daily basis, with a similar number of HGVs;

- during installation of concrete slabs and steel beams / metal work (weeks 29 to 38), as the final stage of the sub-structure construction runs into the initial stage of the super-structure construction, there would be again regular concrete deliveries by 6 cubic metres and corresponding steel / metal work deliveries, with these again resulting in up to three HGVs on a daily basis, with a similar number of HGVS;

- where practicable, the above-referenced concrete deliveries and corresponding steel / metal work deliveries would be undertaken on alternate days to minimise HGV activity, and with regard to the latter delivery group the size of vehicle would be selected to both maximise the load brought to site but against the background of the local routing;

- during the main super-structure works, to bring forward the core and shell of this (including floors and walls), there would be the delivery of a number of materials such as concrete, steel / metal work, brick and wood by HGV, with the overall number of HGVs per day again not exceeding three but with the scope to be less through timetabling;

- during the full fit-out and final decoration stage, vehicles would be primarily panel vans and Transit-type vans, of around five per day typically, and with no more than one HGV per day typically, but with the occasional likelihood of a swap up from LGV to HGV.

3.3.13 The period of 'peak' activity in terms of HGVs supports manageable demands in terms of entry and exit requirements to the site, with a peak of no more than five HGVs requiring access of the site each day and as an average less than one HGV requiring access within any hour. During this period there would be a corresponding three to four LGVs requiring access, again considered manageable concurrently on a daily basis. Outside of the 'peak' period, there would be lesser HGV activity with other activities.

3.3.14 The period of 'peak' activity in terms of LGVs similarly supports manageable demands in terms of entry and exit requirements to the site, with a peak of no more than five LGVs requiring access of the site each day and as an average less than one LGV requiring access within any hour. During this period there would be a corresponding single HGV requiring access, again considered manageable concurrently on a daily basis. Outside of the 'peak' period, there would be lesser LGV activity with other activities.

3.3.15 There may be a small number of additional vehicles during certain parts of each stage of work activity, but these would be occasional and managed to be at an absolute minimum.

3.3.16 The vehicle volumes associated with the distinct construction activity stages make no allowance for the contribution of the local sourcing of materials, which may result in the trip to / from the site being part of an existing delivery route, or the consolidation of local deliveries in particular to reduce vehicle movements to and from the site.

3.3.17 When allowing for a 25% margin of error, which is a standard adopted by many contractors, the average daily number of vehicles would increase to a maximum of eleven vehicles – thus both eleven vehicle arrivals and eleven vehicle departures.

3.3.18 The site working hours would be restricted generally to between 08:00 and 18:00 Monday to Friday and between 08:00 and 13:00 on Saturday if required, with no working on either Sundays or bank / public holidays. The restricted hours would be written into all supply chain orders with sub-contractors, but with further consideration of avoiding peak periods.

3.3.19 The site's Logistics Manager would co-ordinate all deliveries to ensure smooth flow of vehicles to and from the site, with all deliveries to and from the site being subject to strict compliance with a pre-booking system which would identify the time slot when the vehicle could arrive at the site. This system is to be in place throughout the construction period to ensure that St John's Wood Park would not become congested at any time as a result of the construction activity at the site and that no vehicles pull-up and wait on the local network.

3.3.20 Given the estimates of typical daily vehicular activity associated with the distinct construction stages at the site, and typical durations at the site of around thirty minutes, there would be the scope to manage the pre-booking system to avoid as much as is practicable construction vehicular activity during the initial working day period of 08:00-09:00 and the final working day period of 15:00-18:00, leaving a window of six hours. Outside of term times, the additional hour of 15:00-16:00 would be considered.

3.3.21 This would generally avoid conflict with both general peak traffic travelling to and from and through the local area and specific school-related traffic given the proximity of a number of schools to the site at St John's Wood Park, including those along Marlborough Hill (George Eliot Junior School and St John's Wood Nursery & Pre-School) adjacent to the A41 and those along Avenue Road (Swiss Cottage School and the UCL Academy) close to the gyratory.

3.3.22 Whilst there are certain deliveries and vehicle movements which would have to be undertaken during these network peaks, such as early morning concrete pours, a tipper lorry coming to site to ensure capacity is left in the waste storage area and/or early morning / late afternoon deliveries to avoid any delays to the start of construction activity on a particular day, these would again be subject to the pre-booking system to ensure that any such movements would be kept to an absolute minimum relating to the specific work activity.

3.3.23 As such, as much as it is practicable to do so, the pre-booking system would take out of the peak periods and/or those periods most-sensitive to key neighbours such as the local schools those deliveries and movements which do not need to be undertaken during these hours and allocate them instead a slot at an alternative time during the remainder of the working day, to ensure that peak period movements are minimised.

3.3.24 The implementation of the construction delivery booking system would ensure that construction traffic travelling to and from the site is effectively co-ordinated and managed, with vehicles not having a pre-arranged booking not being permitted access.

3.4 Role of Local Sourcing & Consolidation

3.4.1 As standard good practice, the site works contractor would be encouraged to source both operatives and materials from local areas whenever possible, the former as a mechanism to maximise the number of staff-based trips which can then be undertaken practically by walking, cycling or public transport, and the latter to work with the local suppliers so as to co-ordinate any site requirements with their general routings and delivery strategies.

3.4.2 During the later stages of each construction phase, when deliveries are likely to be lower than during the main part of the stage, and also in the latter full fit-out and final decoration work stage, when smaller-sized vehicles would be more used than larger-sized vehicles, the works contractor would be encouraged to use a single larger-sized vehicle to pick-up materials from suppliers and bring to the site as a single larger delivery, thus removing a number of smaller deliveries into one single larger delivery.

3.4.3 This scope for future consolidation would be investigated further by the site works contractor with the various suppliers as the project proceeds during the various distinct stages. Additionally, the site works contractor would consider employing its own vehicle to undertake multi-collection from suppliers of required equipment and materials, as much of these as are practicable from local suppliers, to reduce vehicle numbers and travel distances.

3.4.4 Additionally in terms of considering the use of larger-sized vehicles to reduce vehicle movements further, during the peak periods of the main construction works the sizes of the majority of vehicles are dictated by the material or equipment being moved into or off of the site. However, the contractor would similarly liaise with the suppliers to ensure that the vehicles being used maximise their potential, but remain appropriate to the purpose.

3.4.5 To support the use of appropriate-sized vehicles whilst in parallel seeking to minimise vehicular movements overall, as much as is practicable the main works contractor would seek to ensure that all vehicles bringing materials and equipment to the site as a single-drop trip would be fully-loaded and similarly that all vehicles taking materials and equipment from the site as a single pick-up would be fully-loaded, so as not to waste vehicle capacities.

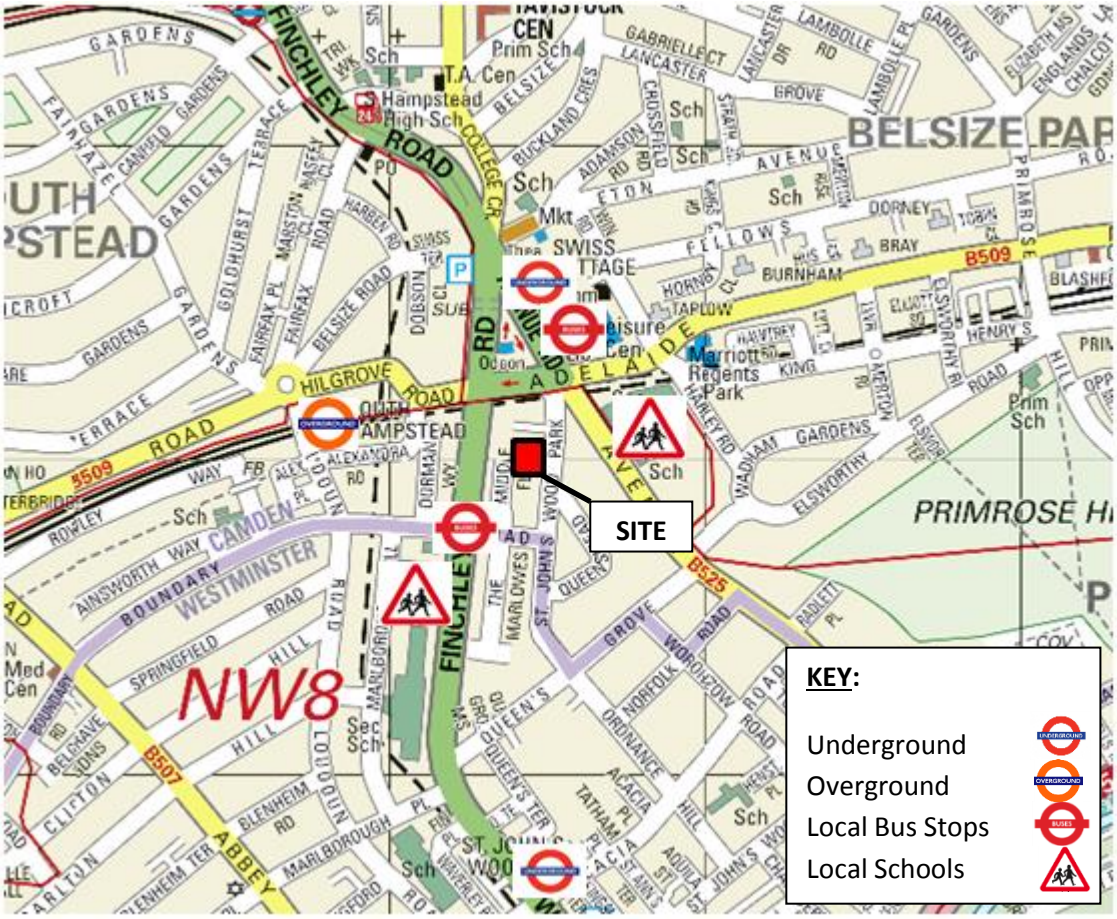
4 Construction Access Arrangements

4.1 Site Location

4.1.1 The construction site would occupy a small plot along St John's Wood Park, with the eastern boundary of the site fronting onto St John's Wood Park and the rear onto the access to a series of garages to the north of Middlefield and accessed via that route off Boundary Road.

4.1.2 A stretch of single yellow line runs along the central section of the frontage onto St John's Wood Park, as a result of the existing vehicular access at this location but which is currently gated, and this measures 10.25m in length. There is a single on-street parking space immediately to the south which marginally overlaps with the site frontage and the southern end of an on-street parking immediately to the north which overlaps with the site frontage.

4.1.3 The plan below identifies the location of the site within the context of the wider area. Further plans will illustrate the location of the site against the background of the local highway network, in particular in terms of both the routing and access strategies.



Plan 2: Site Location & Surrounding Area

4.1.4 In terms of the current traffic management and parking arrangements within the vicinity of the site, both St John's Wood park and the adjacent streets are subject to waiting and loading restrictions in the form of a CPZ, which restricts parking outside of marked bays between the hours of 08:30 and 18:30 Monday to Saturday and thus generally covering the works duration. The marked bays are available to residents with permits only.

4.1.5 Along the local route from and to the A41 the presence of on-street parking is most prevalent along the eastern side of St John's Wood Park between Boundary Road to the south and the A41 to the north and the western side of St John's Wood Park between the site access and the A41 to the north, with a small number of spaces along the southern side of Boundary Road and along the western side of St John's Wood Park south of the access.

4.1.6 The construction site is well-served by public transport, with eight high-frequency bus routes running within 400m of the site (a typical walk time of five minutes) - five along the A41 Finchley Road via stops within the vicinity of Boundary Road and three via stops close to Swiss Cottage underground station. Additionally, Swiss Cottage underground station is similarly about 400m of the site and South Hampstead overground station about 600m, which equate to typical walk times of five minutes and between seven and eight minutes respectively. Finchley Road underground station is also within a walk of twelve minutes.

4.1.7 The cumulative bus frequency in each direction (based on services 13, 31, 46, 82, 113, 187, 268 and C11) is approaching sixty buses every hour during the daytime period, thus a service every minute in each direction, whilst the underground frequency in each direction through Swiss Cottage station on the Jubilee line is twenty-four services every hour during the daytime, thus a service approaching every other minute in each direction. The London Overground services complement the bus and underground, with three services each hour.

4.2 Vehicular & Other Access Arrangements

4.2.1 Drawings TPHS/096/TR/001 and TPHS/096/TR/002, both attached at **Appendix A**, illustrate the general site access arrangements, the first relating to the initial six-months period during which it is envisaged that the majority if not all of the vehicles would be able to service the site off-street and the second relating to the subsequent eighteen-months period during which it is envisaged that due to the site build the majority if not all of the vehicles would service the site by means of a dedicated on-street loading / unloading area.

4.2.2 For each scenario the means of access in terms of ingress and egress is demonstrated using the typical larger-sized vehicles of the standard-sized concrete mixer and the medium-sized tipper (or equivalent), with the corresponding localised temporary traffic management and arrangements for pedestrians passing in front of the site also illustrated. Both scenarios work with the principle of the storage of equipment and materials wholly on-site.

4.2.3 In terms of the delivery of concrete and the removal of spoil during the initial six-months period, which corresponds with up to around two-thirds of the basement excavation work, the access arrangements would be based upon the corresponding vehicle reversing onto the site from St John's Wood Park to sit wholly within the hoarded area to facilitate the transhipment of the material between the site works and the vehicle. Upon completion of the transhipment, the vehicle would then exit from the hoarded area in forward gear.

4.2.4 In terms of the delivery and removal of materials going forward after the initial six-months period, the access arrangements would be based upon the corresponding vehicle pulling up on-street in front of the site, by means of a short reverse manoeuvre to sit alongside the kerbside stretch, with the transhipment of the material between the site works and the vehicle undertaken across the footway. For the delivery of concrete and the removal of spoil the transhipment may be facilitated by means of a temporary overhead gantry system.

4.2.5 With both scenarios there would be no requirement for the vehicle, when stationary, to straddle the footway running along the site frontage along the western side of St John's Wood Park. The current footway width measures at around 3.35m, thus should during periods with the on-street arrangements there be the benefit of implementing a temporary overhead gantry system there would be ample space to accommodate such a structure and maintain an effective footway width of no less than 2m.

4.2.6 The appropriateness of the general principles of these arrangements for the purpose of construction access, as referenced, has been assessed by means of a series of swept paths of the typical larger-sized vehicles likely to be used on a regular basis during certain periods, namely the standard-sized concrete mixer and the medium-sized tipper which are both between 8m and 8.5m in length and around 2.5m in width. Against the background of the proposed on-street arrangements there would continue to be an effective carriageway width of between 4.5m and 5m, thus not materially impacting upon this traffic route.

4.2.7 The corresponding swept paths of these vehicles are illustrated against the background of the proposed access arrangements shown on the drawing series attached at **Appendix A**.

4.2.8 The general principles of the access arrangements when undertaken from on-street along the site frontage may require the formal temporary closure of the stretch of footway running in front of and within the immediate vicinity of the site, solely along the western side of the carriageway. This is to support the safe working and movement of materials and equipment between the kerbside road area and the construction site. These potential arrangements are again shown on the drawings at **Appendix A**.

4.2.9 However, whilst the temporary footway closure would be sought for the duration of the works programme during which access of the site would be by means of the street arrangements, in practice the footway would only be closed to the general public during such times that there is construction vehicle activity in front of the site and with banksmen guiding pedestrians along an alternative route if required. Additionally, the scope to use an overhead gantry system would be reviewed prior to the change in site access arrangements.

4.2.10 At all other times during the hours of permitted vehicular access of the site the banksmen would ensure that the footway is kept clear of any obstructions and that it is available for continued use by the general public. These banksmen would also be in place at the time of a vehicle arrival and vehicle departure, with both the off-street and on-street access arrangements, to support the safer manoeuvring of vehicles into and out of the area.

4.2.11 With regard to the proposed on-street access arrangements there would also be the requirement to suspend the equivalent of the first parking space within the on-street parking bank located to the immediate north of the site access; this would be to provide an increased kerbside stretch of around 16m or so to better facilitate the manoeuvring of the larger-sized vehicles into and out from the kerbside arrangements. This suspension would only be applicable during the weekday working hours of 08:00 to 18:00, thus would be available to residents outside of these hours.

4.2.12 As the works progress and volume of larger-sized HGVS decrease the need for this suspension would be continually reviewed and if not required would no longer be sought.

4.2.13 Additionally, there would be the scope for smaller-sized vehicles, particularly LGVs, to access the rear of the site by means of Middlefield, from and to Boundary Road, subject to the management of existing traffic and parking demands along this private road during the construction programme, so this would be brought forward as a secondary aspect of the routing strategy for the site but subject to the same access controls and management.

4.2.14 Separate to these proposed access arrangements, there may be instances when bespoke and additional temporary traffic management arrangements may be required, such as for the bringing to and removing from the site specialist equipment and for the delivery of larger-sized materials. However, access would be constrained by the turn from the A41 into Boundary Road and the turn from St John's Wood Park onto the A41, thus the principal additional measure may be the suspension of an additional on-street parking space.

4.2.15 These occasional events, if required, would be typically for a duration of up to a day and then a small number of days overall from within the two-year programme. These events would be timetabled, in agreement with LBC, to be undertaken at times agreed to be least disruptive to other road users, but again likely to be on a weekday as much as is practicable when parking demand may be less and local residents away from their homes.

4.2.16 Without a contractor engaged, it cannot be confirmed how access of any specialist equipment would be facilitated. By means of the CTMP the contractor will be obligated to seek to work within the proposed off-street and on-street access arrangements (depending upon the stage of the build) before requesting additional temporary measures.

4.2.17 Representatives of the London Borough of Camden will be approached to arrange the necessary licences and orders (as appropriate) to implement the general temporary access and loading / unloading arrangements as defined within this section of the CTMP, which as a minimum will be required to facilitate implementation of the hoarding line along the back of footway, the formal temporary closure of the footway and the suspension of the single on-street parking space, as well as potentially the formal suspension of the single-yellow line regulations along the site frontage (though loading / unloading is permitted).

4.2.18 The pre-booking system referenced in Section 3 of this CTMP would work under the principle that a vehicle seeking ingress would not be timetabled at a time when a preceding vehicle is likely to be already within the loading / unloading area and not due to egress, thus one vehicle using the area at any one time only being the key objective of pre-booking, with a secondary objective being to distribute the vehicle activity across the working day.

4.2.19 These objectives of the pre-booking system would be applicable equally to each aspect of the access strategy, thus be it in relation to the use of the off-street or on-street arrangements via St John's Wood Park or in relation to the use of the rear access via Middlefield for the smaller-sized vehicles (particularly LGVs).

4.2.20 A delivery schedule would be established and co-ordinated by the member of staff who would be appointed by the Site Project Manager to be responsible for the day-to-day organisation and monitoring of construction logistics for the site, in liaison with the Site Project Manager, with all bookings agreed between the site personnel and the supplier / sub-contractor no less than 48-hours in advance. There would be regular communication between site personnel and the suppliers / sub-contractors as to the vehicle numbers needed for distinct activities.

4.2.21 The proposed access arrangements along St John's Wood Park, both off-street and on-street, have been designed to sufficiently accommodate the typical larger-sized vehicles for the different construction stages, albeit that the vehicles which have determined the design may not be those most frequently used during the latter stages of the construction works in particular when the use of smaller-sized vehicles would be more prevalent and with the scope for these to access via Middlefield to the rear. There would, however, continue to be the scope for the larger-sized vehicles to access the site throughout these latter stages.

4.2.22 All suppliers and site operatives would be notified that no temporary waiting of the vehicles or the loading / unloading of the vehicles is to be permitted at any location along St John's Wood Park or Middlefield, or any other location upon the local roads, other than the proposed access arrangements referenced within the immediate vicinity of the site and in accordance with the agreed pre-booking timetabling system. This would be to ensure that the infrastructure and management arrangements brought forward are used appropriately, again so as to not impact upon the operation of the existing highway network.

4.2.23 During site working hours the site access(es) and loading / unloading arrangements would be manned by banksmen (or equivalent personnel) throughout to prevent unauthorised access of the construction site and to assist as required with the management and manoeuvrability of vehicles through the access and the management and manoeuvrability of pedestrians in front of the site. Suitable signage would be erected at appropriate locations for all user groups, with notices for pedestrians located at either end of the 'works' area.

4.2.24 When the site is closed a security system would be in place and monitored accordingly. Should an intrusion onto the site by means of the hoarded area be attempted or occur outside of working hours, the monitoring personnel would arrange for the site to be visited or for a serious incident alert to be made to the police.

4.2.25 The site would have a single personnel entrance for all operatives and staff, located along the front of the site and incorporated into the hoarding arrangements but separate from the storage area. This would be the access for those travelling on foot, by bicycle and by public transport. This access will be located to best correspond with the location of the project office and welfare facilities, but also to provide separation from the proposed storage area and also the proposed on-site loading / unloading area during the initial six months.

4.2.26 Within the vicinity of the personnel access and staff facilities, there would be dedicated facilities provided for cyclists, which would include the provision of cycle stands as well as changing and equipment storage facilities within the staff welfare area. There would be adequate storage space for no less than two cycles for site personnel within a secure space.

4.2.27 The main works contractor would be registered with TfL's Freight Operator Recognition Scheme (FORS) and would seek that all sub-contractors and suppliers are similarly registered, such that the drivers of all vehicles are suitably trained and that all vehicles are fitted with safety equipment appropriate for the use for which it is intended.

4.2.28 Contractors and suppliers operating vehicles under the FORS should ensure that side guards are fitted to the vehicle, unless it has been demonstrated to the highway authority that the vehicle cannot perform the intended function if fitted, that a proximity sensor and warning system are installed, that the vehicle has a Class VI mirror and that prominent signage is displayed on the vehicle, particularly to warn cyclists of the danger of passing on the inside.

4.3 Vehicle Access Routings & Controls

4.3.1 All subcontractors and suppliers orders would include details with regard to the routes to be used when arriving at and leaving from the site. This would be the principal means of how these key parties would be informed of the routing guidance and controls but it would also be reiterated to site supervisors when they are inducted prior to commencing work on site.

4.3.2 Until such time that a principal works contractor is on board to undertake and co-ordinate the works, as well as the sub-contractors and suppliers requiring access the site, it is not practical to be fully prescriptive with regard to the routing strategy. However, an overview strategy of the local routing strategy can be put forward, with this reconfirmed and/or updated during a subsequent version of the CTMP prior to commencement of construction.

4.3.3 In summary, the routing within the vicinity of the site would be for all vehicles to approach from the direction of the A41 Swiss Cottage gyratory and similarly depart in the direction of the A41 Swiss Cottage gyratory. The inbound route would be along the A41 Finchley Road between the gyratory and Boundary Road, then along Boundary Road and northbound along St John's Wood Park – a route of 500m in length. The outbound route would continue northbound along St John's Wood Park to the gyratory – a route of 140m in length.

4.3.4 There would be additionally the scope for smaller-sized vehicles to access the rear of the site by means of Middlefield, from and to Boundary Road, subject to the management of existing traffic and parking demands along this private road during the construction programme, so this would be brought forward as a secondary aspect of the routing strategy for the site. As referenced, this would be smaller-sized vehicles only and so for use by LGVs in particular.

4.3.5 This circuit adopts an anti-clockwise route from and to the A41 Swiss Cottage gyratory, as shown in summary on the overview plan overleaf.

4.3.6 The appropriateness of this core routing strategy has been assessed against the background of the manoeuvrability through the local network from and to the strategic A41 of the typical larger-sized vehicles requiring regular access of the site during certain construction periods – the standard concrete mixer and the medium-sized tipper (or equivalent). These routing assessments are presented on Drawing TPHS/096/TR/003, attached at **Appendix B**.

4.3.7 The routing to and from the site from further afield will be dependent upon the origin / destination of the service provider, but the route from and to the A41 Swiss Cottage gyratory connects the directly with the strategic TLRN 'A' road network which is that best suited to accommodate construction traffic and generally avoiding sensitive areas.

Plan 3: Summary Local Routing

4.3.8 The four typical routes which would set the principles for those to be adopted at a later stage in terms of the routing strategy further afield are as summarised, based on the use of the wider TLRN network to and from the A41 Swiss Cottage gyratory:

North: From the site, the connection from St John's Wood Park onto the A41 Swiss Cottage gyratory links directly into the route to the north along the A41 Finchley Road heading towards the strategic North Circular route around the inner London area.

East: From the site, again the connection from St John's Wood Park onto the A41 Swiss Cottage gyratory links directly into the route to the south along the A41 Finchley Road heading towards central London, travelling along this to the A501 Marylebone Road and then turning left in the direction of Euston and King's Cross.

South: As to the south, travelling in the direction of central London and the A501 Marylebone Road.

West: As to the east, but turning right onto the A501 Marylebone Road in the direction of Paddington and the A40 Westway.

4.3.9 Where the origin and destination of the supplier / contractor is further afield, the longer-distance routing strategy would be to direct these to use the stretch of the A41 north of the Swiss Cottage gyratory, between that location and the Brent Cross interchange which provides direct access with the strategic North Circular route around the inner London area.

4.3.10 Where a vehicle arriving at or departing from the site is on a 'single drop' delivery, then the vehicle would be directed to use one of the four general routes or the longer-distance North Circular route, as there would be no need for deviation off of the route other than for the ultimate origin / destination at either end.

4.3.11 Where it is a multi-drop vehicle (only part of the load is specifically for the project), the vehicle would be recommended to use one of the general routes as much as is practicable, but this cannot be fully enforced as there would be prior and/or subsequent drops.

4.3.12 As referenced previously in this plan, all deliveries to site would be required to be pre-booked into a timed delivery slot operated by the site's logistics manager. Vehicles which arrive without a booked slot or miss their timed slot would be turned away from the site, unless the proposed access arrangements are clear and the vehicle can be accommodated without impacting upon the remainder of the timetable for that day.

4.3.13 As part of the pre-booking, all suppliers and sub-contractors seeking access of the site would be advised upon each event as to whether to continue to access the site from the front via St John's Wood Park or, should it be a smaller-sized vehicle and there be space available, to access the site alternatively from the rear via Middlefield.

4.3.14 Temporary signage would be installed at key locations upon the footway either side of the site access advising pedestrians if the temporary footway closure proposed potentially in conjunction with the proposed on-street access arrangements would be required for a particular time period. Both these notifications and the management of pedestrians during such periods would be managed by the banksmen located around the access arrangements.

4.4 Parking Arrangements & Staff Travel Access

4.4.1 There would be no car parking spaces provided on-site for staff and staff would not be permitted to access the site by car. The CPZ and its hours of operation would be adequate to enforce any issues that this may have as the on-street parking banks along the local roads are allocated generally for resident permit holders only and are subject to controls between the hours of 08:30 and 18:00 Monday to Friday.

4.4.2 Staff and visitor groups would be notified that there is no available car parking on-site and also that they would not be permitted to park on the adjoining local roads, with all site user groups encouraged to use the range of public transport services, cycle or walk. This would be explicitly referenced in the terms of engagement and reiterated during induction for site staff personnel. This would form an integral part of the site's *'Travel & Parking Strategy'*, which would have the overarching objective of minimising vehicle-based activity for all.

4.4.3 Prior to commencement of employment, all employees would be notified of the *'Travel & Parking Strategy'* for the site, whilst similarly all contractors and suppliers / delivery companies would be notified of the restrictions. The *'Travel & Parking Strategy'* would comprise a double-sided A4 sheet detailing how the site can be accessed by each of the non-car modes of travel, identifying the local bus and underground / overground services as well as links to key journey planning websites, confirming how the site can be accessed by foot and by cycle, and listing the 'dos' and 'don'ts' specifically in relation to driving and parking.

4.4.4 The strategy would reiterate that employees should not be driving to and from work, but instead using the other modes.

4.5 Risk Assessment Considerations

4.5.1 The main potential risk associated with the construction logistics would be the risk of a collision between construction vehicles and those user groups travelling in proximity to the site and in the local roads, particularly pedestrians using the footway in front of the site.

4.5.2 When the site is to be hoarded off for construction it would have a dedicated security guard and/or banksman stationed full-time at the proposed access arrangements, be these those initially off-street or those subsequently on-street (and also if required at the rear), to ensure that vehicles arrive safely and are supervised during their period of delivery, as well to prevent unauthorised vehicles or members of the public entering the site.

4.5.3 Banksmen (and equivalent personnel) would all have completed mandatory and best practice training before commencing work on site and training would be maintained throughout their time at the project. The training of this staff group would ensure that vehicles safely manoeuvre between the general traffic stream and the proposed access arrangements, again both off-street and on-street, during both entry and exit manoeuvres.

4.5.4 As illustrated on the vehicle tracking plans, vehicles would reverse into the proposed access arrangements, before exiting in forward gear, hence the use of banksmen. A banksman would be located within the vicinity of the access arrangements along St John's Wood Park during the times of vehicles being permitted access, confirming to pedestrians if required that the footway remains available for their use at that time.

4.5.5 Prior to the arrival of a vehicle at the site for loading / unloading, banksmen would locate themselves at either end of the stretch of footway to inform pedestrians of the impending closure (should this be brought forward) and to start initiate arrangements to close the footway and confirm the alternative arrangements (again if required). These banksmen would remain in-situ for the duration of the vehicle being loaded / unloaded in this area and then following departure of the vehicle remove the closure arrangements and open the footway, should this have been installed.

4.5.6 The banksmen team would also assist each vehicle manoeuvring into the proposed access arrangements, given that the vehicle would be reversing (particularly the larger-sized vehicles) and the driver of the vehicle may have some difficulty to maintain a full view of the area. The banksmen team would also assist with the vehicle exit, which whilst to be undertaken in forward gear would again aid the driver in maintaining a full view of the area.

4.5.7 In addition to the above measures, temporary signage will be installed at convenient locations to direct pedestrians away from this area at the earliest opportunity, such that the risk of conflict between construction vehicles and other groups would be minimised, should for any period of time there be the requirement for the footway closure to be implemented.

5 Monitoring & Review

5.1 Key Parties – Roles & Responsibilities

5.1.1 The main works contractor's Project Manager would appoint a member of staff who would be responsible for the day-to-day organisation and monitoring of construction logistics for the site. Part of the responsibilities of this individual would be the implementation and management of the Construction Traffic Management Plan (CTMP) for the lifetime of the construction works on the project.

5.1.2 As well as planning and co-ordinating the day-to-day site deliveries, the arrangements to accommodate the delivery vehicles and the arrangements for special deliveries, this manager would liaise with nominated representatives of key stakeholders and interested parties to discuss and agree where practical to do so consolidation of vehicle activity and other measures to support the running of the CLP.

5.1.3 A notice board would be provided on site which would contain contact telephone numbers for information and complaints and in the event of an emergency occurring. These boards would also display the latest copy of the newsletter which would be issued regularly to neighbours, to inform them of key activity dates and key contacts. This information would be updated monthly and also prior to the step-changes between different work activities.

5.1.4 At this stage the appointment of the Logistics Manager has not been made, since the main works contractor has not been appointed. Until such time that the main works contractor has been engaged TPHS (as the lead author of this draft CTMP) would be the main point of contact for any queries and comments relating to the further development of the CTMP for the main works stage.

5.1.5 The London Borough of Camden would be notified of the nominated representative appointed to implement and manage the CTMP within a month of the appointment. This appointment would also be notified on the site boards available for the public to view.

5.2 Plan Updating

5.2.1 The CTMP and its associated documents are 'live' documents and would be regularly reviewed with the key stakeholders and updated throughout the project's construction lifespan, either as events dictate such as a result of comments being brought forward from local representatives or additional local construction sites coming online and thus increasing the opportunity to consider consolidation and shared practices or if there is a substantial change to the phasing of the works which would require changes to the CTMP practices.

5.2.2 After implementation of the CTMP at the start of the construction works, envisaged to be around January 2016, the CTMP will be first reviewed in the run-up to the end of the excavation works, thus by week 28 and six months into the project.

5.2.3 Within the main super-structure works, the CTMP would be reviewed again after a further six-months duration, thus by the end of the first year of the two-years construction programme, and then with a further review in the run-up to the full fit-out and final decoration stage thus by Week 70 and with six months or so to scheme completion.

5.2.4 Should an update to the CTMP be required as a result of any of these reviews, these would be undertaken and an updated version issued to the London Borough of Camden and other key stakeholders for review and information. Should the review identify that no material changes are required, this would also be notified to the Borough and other key stakeholders.

5.3 Monitoring Activity

5.3.1 The logistics manager would monitor vehicle movements on a daily basis and would also carry out a survey of vehicle movements and routes at regular (three-monthly) intervals throughout the project, as well as at the time of the previously-referenced CTMP reviews when different, and produce a summary sheet for information. The contents of this summary would be agreed at the start of the project and form part of the review process.

5.3.2 Specific aspects to be picked up in the general monitoring of site activity would include:

- monitoring of early delivery / pick-up arrivals and those seeking to wait on the local approach routes, so that the sub-contractor or supplier can be notified and warned of the inappropriate behaviour and the need to follow good practice;

- monitoring of the number of vehicle movements during peak periods, to ensure that these are being kept to an absolute minimum and are essential to support operations at the site, with use of the six-hour window being maximised;

- monitoring of staff travel patterns to ensure that the facilities initially brought forward (cycle parking and welfare facilities) continue to be adequate and to identify any inappropriate car travel, so that the individual can be advised.

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Transport Planning & Highway Solutions

APPENDICES

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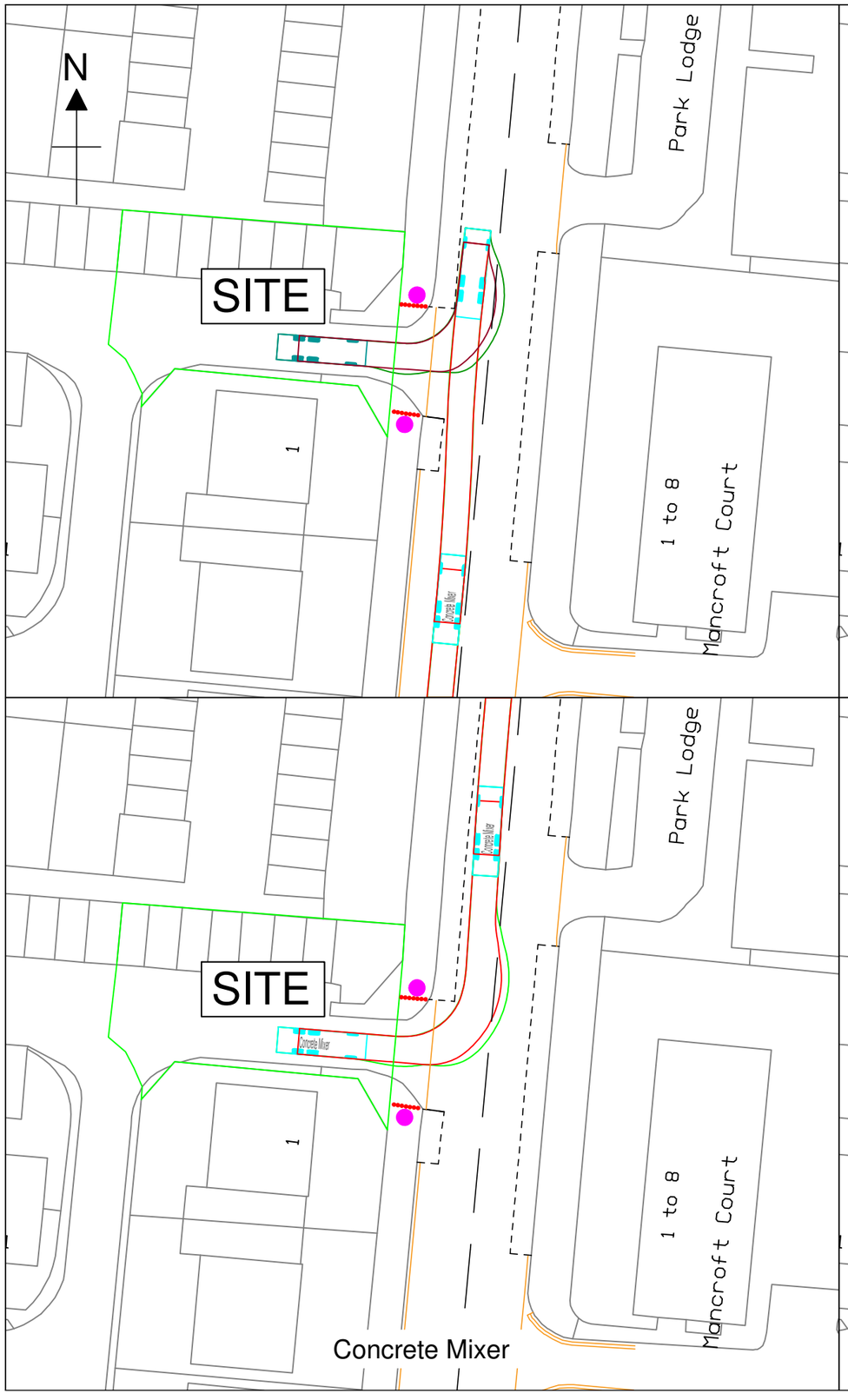
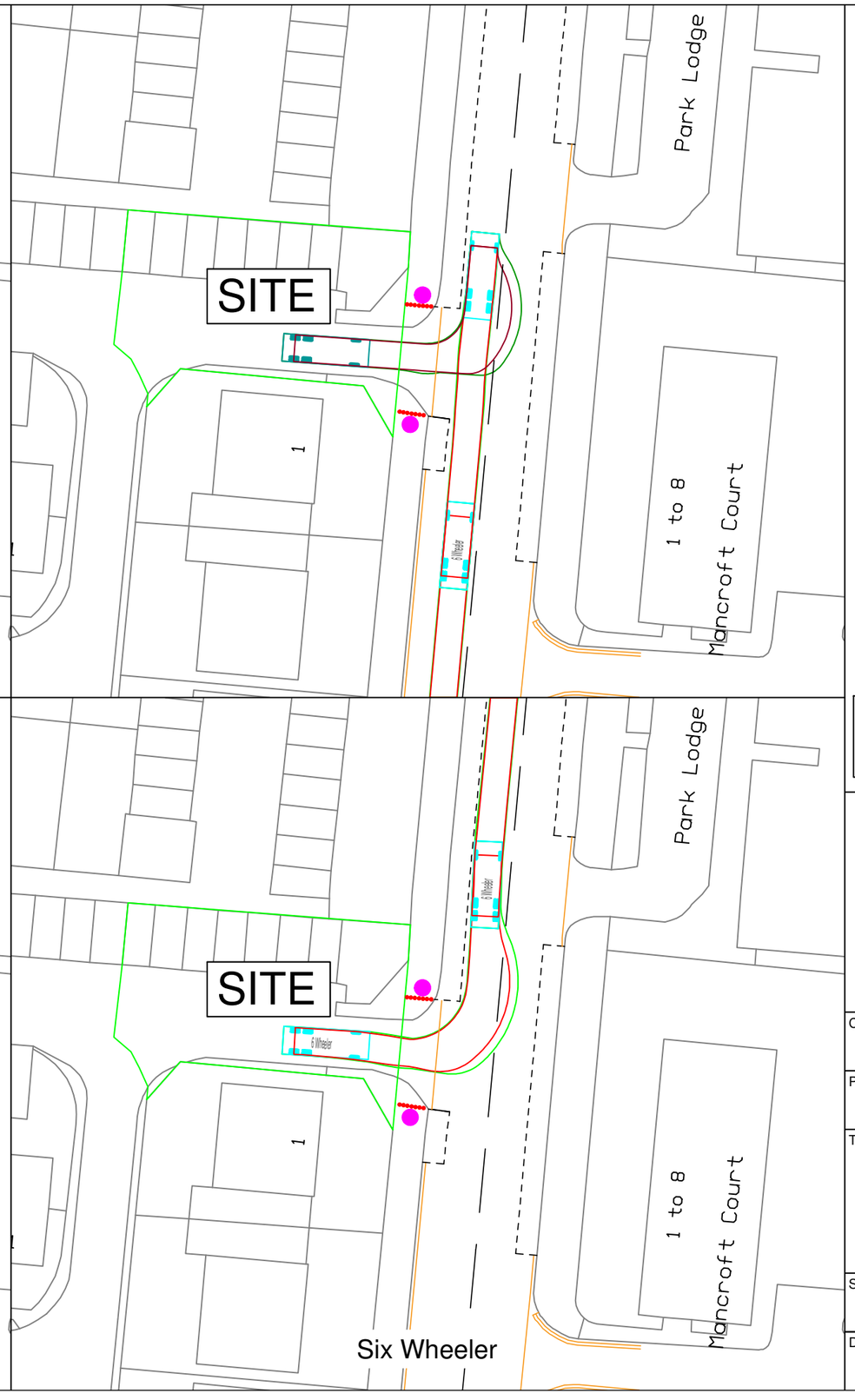
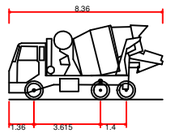
Transport Planning & Highway Solutions

APPENDIX A

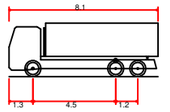






Concrete Mixer

Overall Length	8.360m
Overall Width	2.390m
Overall Body Height	4.027m
Min Body Ground Clearance	0.358m
Max Track Width	2.413m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	8.210m



6 Wheeler

Overall Length	8.100m
Overall Width	2.600m
Overall Body Height	2.896m
Min Body Ground Clearance	0.346m
Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	7.850m

Core Banksmen

Part-Time Mobile Fence

TPHS
Transport Planning & Highway Solutions Limited
TPHS Limited
3rd Floor, Regal House
70 London Road
Twickenham
TW1 3QS
Tel: 020 8622 4430
@: info@tphs-ltd.co.uk - www.tphs-ltd.co.uk

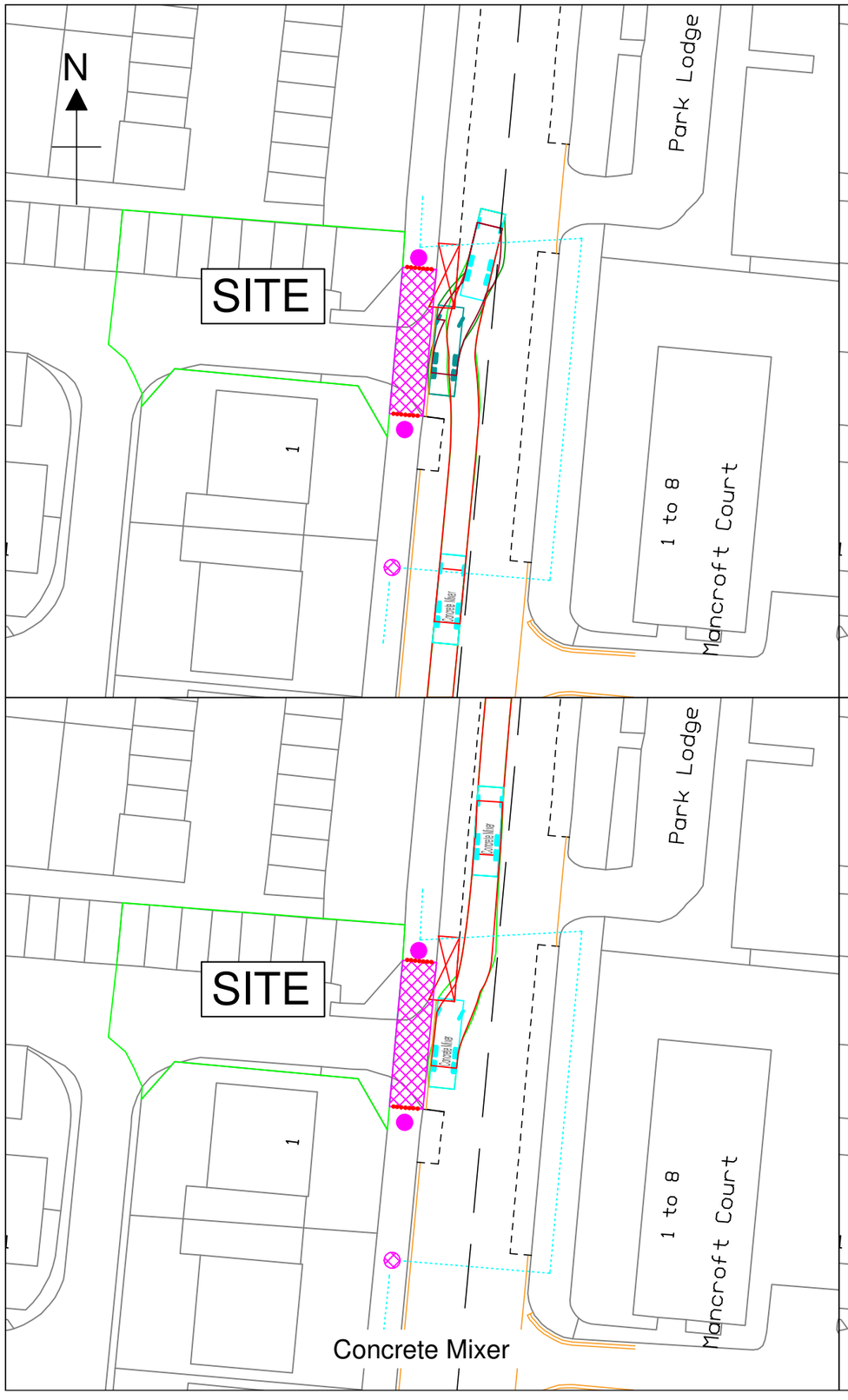
CLIENT:
MR M OFORI

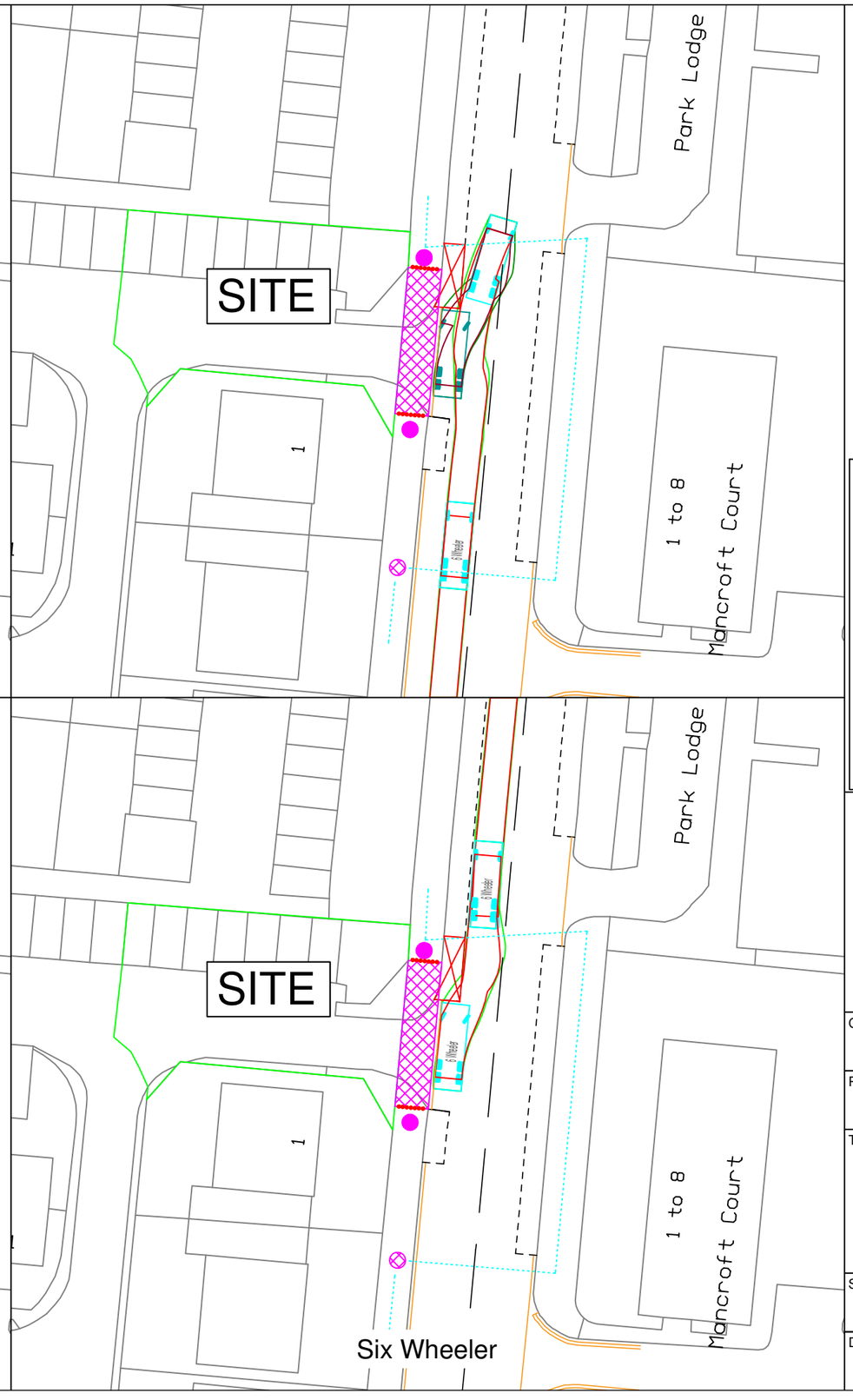
PROJECT:
ST JOHN'S WOOD PARK

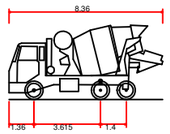
TITLE:
CTMP LOGISTICS
SITE ACCESS SWEPT PATHS
OFF-STREET ARRANGEMENTS

SCALE:	PLOT SIZE:	DATE:
1:500	A3	28/08/15

DRAWING No.	REV.
TPHS/096/TR/001	A

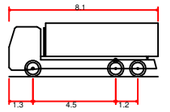






Concrete Mixer

Overall Length	8.360m
Overall Width	2.390m
Overall Body Height	4.027m
Min Body Ground Clearance	0.358m
Max Track Width	2.413m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	8.210m



6 Wheeler

Overall Length	8.100m
Overall Width	2.600m
Overall Body Height	2.896m
Min Body Ground Clearance	0.346m
Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	7.850m

Suspended Parking Space

Temporary Stretch of Footway Closure

Part-Time Mobile Fence

Core Banksmen

Additional Site Staff (if required)

Pedestrian Diversion Route (if required)

TPHS
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CLIENT:
MR M OFORI

PROJECT:
ST JOHN'S WOOD PARK

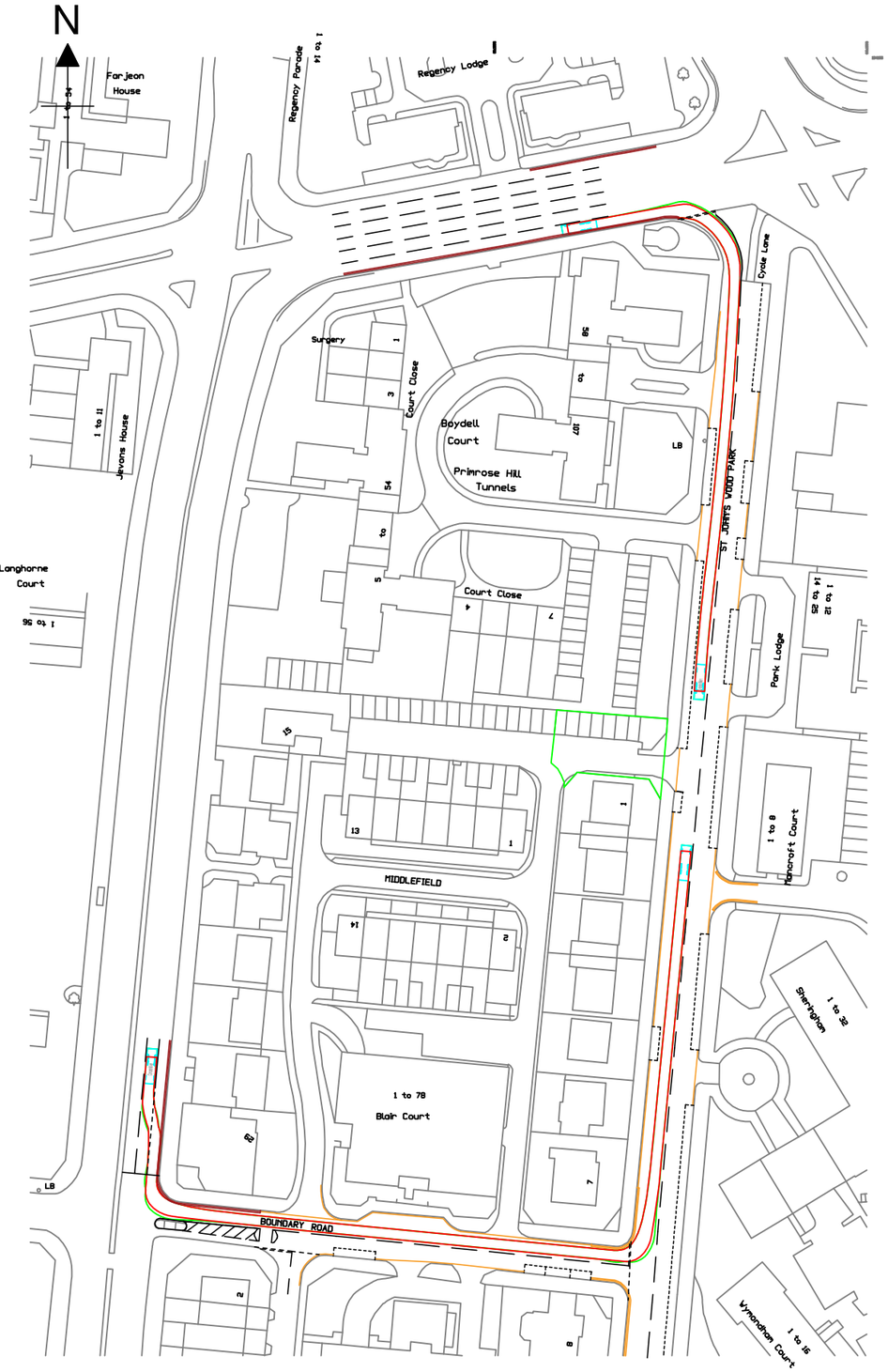
TITLE:
CTMP LOGISTICS
SITE ACCESS SWEPT PATHS
ON-STREET AARRANGEMENTS

SCALE:	PLOT SIZE:	DATE:
1:500	A3	28/08/15

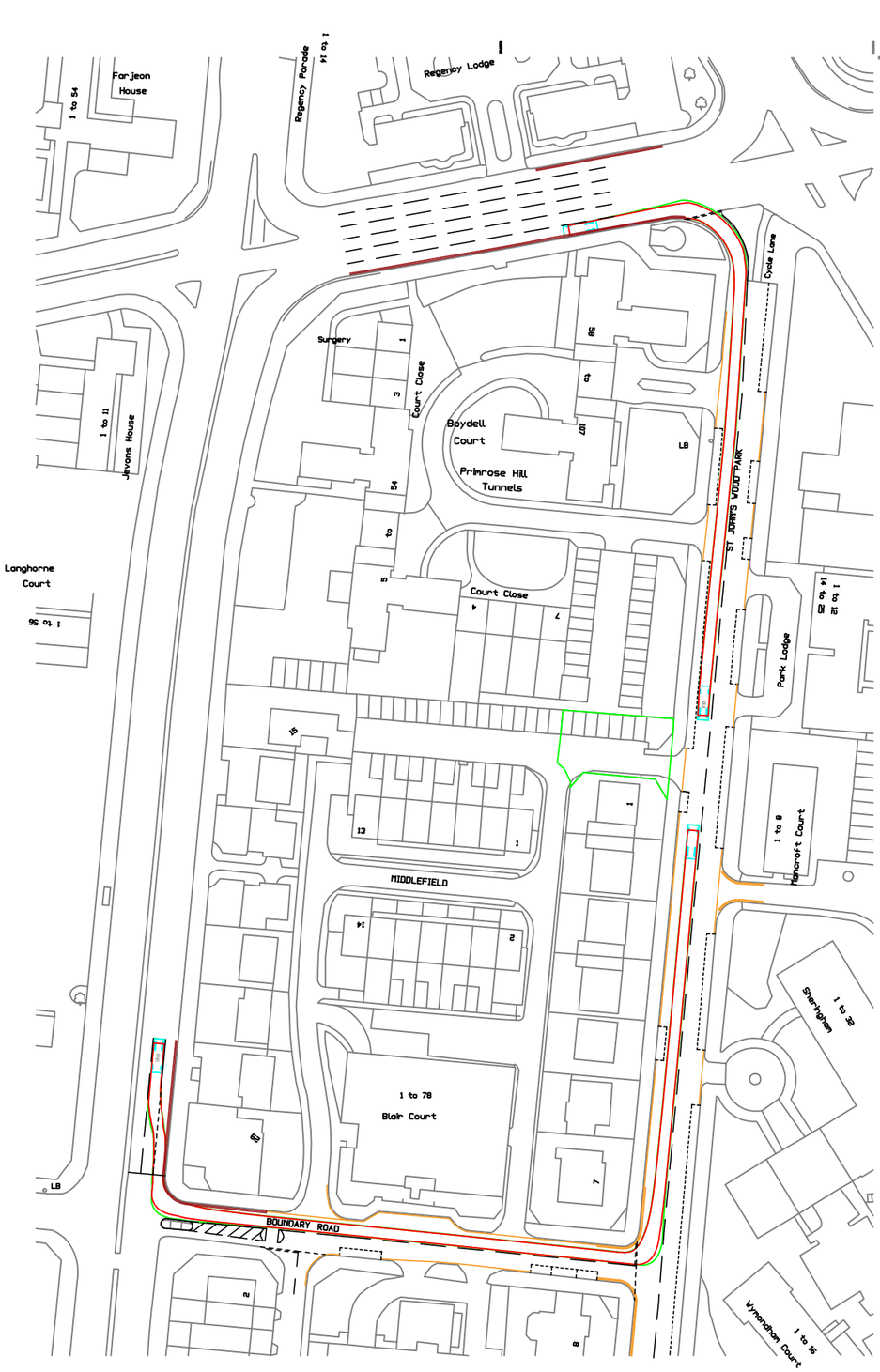
DRAWING No.	REV.
TPHS/096/TR/002	A

TPHS
Transport Planning & Highway Solutions

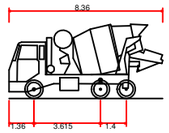
APPENDIX B



Concrete Mixer

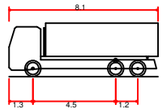


Six Wheeler



Concrete Mixer

Overall Length	8.360m
Overall Width	2.390m
Overall Body Height	4.027m
Min Body Ground Clearance	0.358m
Max Track Width	2.413m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	8.210m



6 Wheeler

Overall Length	8.100m
Overall Width	2.600m
Overall Body Height	2.896m
Min Body Ground Clearance	0.346m
Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	7.850m

TPHS

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CLIENT:
MR M OFORI

PROJECT:
ST JOHN'S WOOD PARK

TITLE:
CTMP LOGISTICS
ROUTING ASSESSMENT
SWEPT PATH SERIES

SCALE:	PLOT SIZE:	DATE:
N.T.S.	A3	28/08/15

DRAWING No.	REV.
TPHS/096/TR/003	A