

Twickenham Rediscovered Programme - Riverside Construction Management Plan

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Abstract	
<p>The purpose of this document is to set out the Construction Method statement for the construction of the Twickenham Rediscovered Project, which incorporates 1, 1A, 1B King Street, the west side of Water Lane between King Street and The Embankment and the north side of The Embankment between Water Lane and Diamond Jubilee Gardens, Twickenham.</p>	

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1 INTRODUCTION

The purpose of this document is to set out the Construction Method statement for the construction of the Twickenham Rediscovered Project, which incorporates 1, 1A, 1B King Street, the west side of Water Lane between King Street and The Embankment and the north side of The Embankment between Water Lane and Diamond Jubilee Gardens, Twickenham.

Since 2010, the London Borough of Richmond upon Thames has worked with multiple stakeholders to create a strategy for the future development of Twickenham town centre, making the best use of the opportunities presented by key sites to deliver high quality new buildings and public spaces and a more attractive and prosperous town centre.

Following a series of further consultations and the acquisition by the council of a number of key properties, the potential was created for a new look Twickenham Town Centre taking forward some of the principles for Highways and the Street Scene set out in the Area Action Plan.

A design consisting of a mixed use development of residential flats, retail space and office provision has emerged and a planning application is proposed by the end of 2017. The project proposes to redevelop the area currently occupied by 1, 1A and 1B King Street, the west side of Water Lane between King Street and The Embankment and the north side of The Embankment between Water Lane and Diamond Jubilee Gardens. The current site plan is shown below:



Diagram A: Current Site Plan

This statement sets out indicative measures to ensure safety and minimise disruption to local residents, businesses, the general public and the workforce employed during the construction process of the Twickenham Rediscovered Riverside Project.

In advance of starting the works on site a detailed Construction Phase Health and Safety Plan will be prepared in accordance with the Construction (Design and Management) Regulations 2015. This plan will be progressively refined and developed as trade package contractors and specialists are appointed, and more specific and detailed methods, techniques and requirements are established.

2 CONSTRUCTION MANAGEMENT PLAN

2.1 Introduction

This Construction Management Plan has been prepared on the basis of the current initial design information and gives an indication of our general approach to the construction and management of the project.

We have included our intentions for managing and supporting the project and the particular approach that will be taken for certain key aspects.

Certain areas of operation will be the subject of specialist considerations, and more specific and detailed method statements relating to these operations will be developed and approved as the project proceeds. These additional key method statements will comply with the requirements of the relevant regulatory bodies and will be prepared by the specific contractors involved.

2.2 Phasing

The works will be completed in a number of phases following an initial demolition project. The phases will include:

- a. Enabling Infrastructure Relocation Works – moving the existing electrical substation
- b. Phase 1 site – Site south of the current service road
- c. Phase 2 site – Site North of the current service road



Diagram B: Site Plan Showing Phase 1 & 2

The construction programme and phasing diagram is included as Appendix A.

For both phases A and B, the principals and approach set out in the construction management plan will be followed. The indicative site set up will be tailored to the phase and is shown in separate site set up plans in Appendix C.

2.3 Pre-start Investigations

Prior to commencement of site works, external surveys may be carried out to confirm the existing site levels and the extent of any existing services. A full condition survey of the existing environs will also take place and be duly recorded prior to each phase of works commencing. These will be plotted on a drawing and a photographic record will be taken, which will be maintained as a record throughout the stages of the contract.

Notification of the project commencement will be issued to all Statutory Authorities, advising them of the construction works and programme.

Pre-commencement newsletters will be delivered to all neighbouring addresses introducing the site team and outlining upcoming activities and relevant points of contact etc. This will continue on a quarterly basis, or as required, throughout the works.

At the commencement of the contract, the contractor will start the enabling and logistics activities that are detailed below.

2.4 Security and Site Establishment

A secure site compound may be established as shown in Appendix C. During the Construction Phase a 2.4m high timber hoarding will be erected along the site boundary and will be inspected weekly, maintained and adapted during the contract to suit the phasing of the works. Any existing fence to adjacent properties will be thoroughly examined to ensure that it conforms to HSG 151 and if not will be secured accordingly.

Site office and welfare facilities may be located as identified in Appendix C and will comprise: site management offices, meeting room, induction room, canteens and welfare facilities. These will be erected on hard standings within the contractor's working area and segregated from construction traffic by pedestrian barriers.

2.5 General Access Strategy

The site accommodation and pedestrian access may be located near the corner of Water Lane and the Embankment for Phase A and in the newly built underground car park during Phase B. It is currently intended to set up the site access arrangements as shown in Appendix C. The following notes should be read in conjunction with this drawing:

- The main vehicle access and egress routes on to the site will be via the designated and segregated site entrance and gates along the Embankment in Phase A and in Water Lane in Phase B.
- To ensure congestion is avoided appointed suppliers and sub-contractors will be contracted to deliver to an agreed schedule listing both the date and time of delivery. Delivery vehicles will be provided with directions to the site and be required to turn off engines to avoid nuisance upon arrival. Construction vehicles will be held at the layby on the eastbound A316. Once the site is clear the vehicle will be called to site. Access to the site is shown in Appendix D.
- **Deliveries will be avoided during peak hours: 08:00 – 09:00 and 17:00 – 18:00.**

- Site working times will be:

07:30- 18:00 Monday – Friday

08:00-13:00 Saturday

Sundays and Bank Holidays No works on site

- All deliveries will be routed to site along a preferred access route selected to minimise disruption to local residents and surrounding areas. This is shown in Appendix D.
- **The footway and carriageway on the A305 King street must not be blocked during the development. Temporary obstructions during the development must be kept to a minimum and should not encroach on the clear space needed to provide safe passage for pedestrians or obstruct the flow of traffic on the A305 King street.**
- During Phase 1, four pay and display parking spaces and a motorcycle bay will be suspended along the east side of Water Lane to allow access for construction traffic.
- During Phase 1, five business parallel parking spaces will be moved to their final location on the riverfront and the parallel parking bays removed. In addition, three resident only parallel parking bays will be suspended on the Embankment to allow safe entrance and egress for construction vehicles.
- On completion of Phase 1 and during construction of Phase 2, seven resident and pay and display spaces will be suspended along the west side of Water Lane.
- At the pedestrian access to the site compound, a combination of turnstile and signing in/out procedures (visitors) will be established. These will be operated in conjunction with site safety, environmental and quality inductions for all personnel visiting and working on the project.
- There will be no parking available onsite and all operatives and visitors will be encouraged to take public transport.
- An appropriate holding area will be formed within the construction site where vehicles can pause, turn off their engines until required to unload/load.
- No waiting will be permitted on the roads adjacent to the site. The Gateman will be posted at the site entrance to ensure that construction vehicles do not obstruct pavements or queue on the roads adjacent to the site.
- The site access will be kept clean to avoid debris and other materials being deposited on the surrounding streets and footpaths.
- A 5mph speed limit will be enforced for construction traffic on immediate public roads and on the site.
- Safety signs will be placed around the site and along all pedestrian routes.

- Adequate signage will be displayed directing traffic to/from site and traffic movements into/out of site will be controlled by a trained Traffic Marshall/Banksman adjacent to the existing main entrance gate.
- Multiple deliveries or abnormal loads will necessitate holding vehicles in designated zones away from site to avoid vehicle congestion at the site entrance.
- All deliveries including plant will be within the site boundary.
- Deliveries will be strictly controlled to delivery time restrictions described above.
- A Banksman will be employed to receive and manage deliveries arriving and all large deliveries will be required to book in advance to avoid multiple, unexpected arrivals on site.
- Significant large deliveries, e.g. steelwork lorries/cranes etc. will be pre-empted and notified to our neighbours, where possible, via monthly update newsletters.
- The Banksman will provide safe temporary road crossing points if footways are closed.
- To ensure the safety of pedestrians and cyclists, the contractor will comply with CLOCS (Construction, Logistics and Community Safety) requirements.
- Due to the location of the site in central Twickenham, which has significant road closures on event days at Twickenham Rugby Stadium, no work will be undertaken on match days.
- The current schedule of events for Twickenham can be found below http://www.richmond.gov.uk/twickenham_events_timetable

2.6 Wheel Washing Facilities

A wheel washing area is indicated inside the exit gate as shown in Appendix C to prevent deposit of materials on to the public highway. These facilities will be implemented and employed as required and will comprise a temporary concrete hard surface with drainage to a collection tank ensuring that dirty water from wheel washing does not discharge into the existing drainage system. Any necessary wheel washing will be via a hand held pressure jet washer utilizing recycled water from the collection tank and a vibro-type platform wheel wash to dislodge and collect loose mud and debris.

2.7 Site Management

The site management for the project will comprise a site based construction manager who will lead the site team and administer the contract. In addition, a senior building manager will support the construction manager and be responsible for the overall construction works on site. The site based team will also consist of a lead and assistant project surveyor managing the commercial aspects of the project.

The site team will be supported and assisted by staff including environmental, planning, temporary works, health and safety managers.

2.8 Signage

A main construction signboard and its content will be discussed and its position agreed with the Local Authority.

Site signage will be provided within the boundaries of the site as necessary to advise operatives/visitors and delivery staff of safety requirements within the confines of the site and where to report on arrival. The signs will not be illuminated within the site boundary and will not face the residents of Water Lane. Such signage will include:

- Accommodation / access requirements
- Speed limits
- Overhead / underground services
- Safety helmet and footwear requirement
- Noise
- Danger construction site, etc.

The contractor's banner will be incorporated into the hoarding surrounding the site.

2.9 Movement and Hoisting of Materials

All vehicle movements and deliveries will be subject to the control of the contractor.

The storage of materials on site will be kept to an absolute minimum and therefore delivery scheduling will be carried out to ensure supply is on a 'just in time' basis only.

All concrete and screed deliveries will be proposed as 'ready mixed' and will be delivered to site in appropriate vehicles. Concrete and screed placement techniques will be changed and adapted to suit the location and suitability of the equipment for its placement.

Vertical movement of material and equipment will be done by crane or forklift.

2.10 Storage and Handling

Various holding areas within the site boundary will be setup for all plant and materials delivered to site to be stored in a neat and safe fashion. Some materials will be stored on upper floor within the building footprint ready for the finishing trades, once the envelope is weather tight. More vulnerable materials/equipment will be stored in the secure container or programmed on to site to be incorporated directly into the construction.

2.11 Waste Management

A waste removal strategy will be developed during the pre-commencement period. This strategy will be incorporated into all trade contractor orders.

Rubbish skips will be provided within the contractor's site area, as shown in Appendix C which will be removed and replaced on a regular basis. All trade contractors will be required to transport and deposit their rubbish within this provision.

Through the design process the volume of waste to be disposed is reduced as much as possible and either on or off site segregation (depending on space and the chosen disposal company) enables as much as possible to be recycled.

Packaging, whilst used where necessary, will also be kept to a minimum.

2.12 Scaffolding

Conventional scaffolding, where required, will be independent with boarded lifts to suit the nature, location and type of operation.

All scaffolding will be securely tied to the structure and will include suitable ladder access.

Scaffolding will be provided, erected and maintained in accordance with all current statutory regulations. In addition, brick guards will be provided on all 'live' lifts.

Suitable guard railing will be utilised to prevent falling from unprotected edges of the excavations, upper floors and staircases as applicable.

No person other than a certified competent scaffolder will be permitted to erect, alter, adapt or dismantle any conventional scaffolding.

2.13 Temporary Services

A power supply will be provided using existing supplies. A 110v power will be utilised throughout the building site.

Safety & emergency florescent lighting will be used; all lighting will be controlled via time clocks to ensure they are not left on outside of the permitted working hours. Any flood lighting used on site will be pointed in to the site to minimise light pollution outside of the site boundary.

Water will be provided direct from the mains system for use in the welfare facilities.

Temporary drainage will be connected to the existing foul drains until the new foul connection to the mains has been installed and commissioned.

Telephone lines and an electronic data transfer line will be provided to the site offices.

2.14 Hours of Work

The intended working hours are:

07:30 -18:00	Monday to Friday
08:00 -13:00	Saturday

No working on Sundays and bank holidays or on match days.

In the unlikely event that extended hours are required, the contractor will advise and agree these in advance with the local planning authority.

2.15 Air Quality and Dust Management Strategy

Best practice will be employed in respect of dust and debris control from the construction activities. The principles outlined in 'The control of dust and emissions from construction and demolition best practice' produced by the Greater London Authority will be applied. This can be found in Appendix F. Specific dust and nuisance avoidance plans are show in Appendix B.

On the basis that best practice measures are to be adopted at all times along with the mitigations measures identified, a visual assessment is considered appropriate for this site. During the piling and early groundwork's operation, dust, noise and vibration monitoring will take place.

The following five point assessment scale should be used when making a visual assessment of any impacts on the downwind boundaries of the site.

	Significance	Description
1	None	No visible emission
2	Slight	Visible emission settling within 50 m of the source
3	Moderate	Visible emission settling more than 50 m from the source but more than 100 m from the boundary
4	Serious	Visible emissions settling less than 100 metres from the site boundary
5	Major	Visible emission crossing the site boundary

Table 1: Visual Inspection Assessment

A record of the results of the daily visual inspection will be kept along with meteorological conditions including the prevailing wind direction across the site, wind speed, air temperature and the incidence of precipitation.

Dust Trigger Levels

Trigger levels have been defined in two stages, where the first stage should be used to identify preventative measures where dust or emissions have the potential to reach unacceptable levels. In these circumstances, the site manager will identify the source and review the process, taking any necessary preventative action.

The second trigger stage is defined as the level above which dust or emissions are at an unacceptable level at the sensitive receptor location. Action must then be taken to firstly suppress or secondly contain the emissions so that they are reduced back down to acceptable levels

Monitoring Parameter	Specific Trigger Level to Activate an Action Response	Specific Actions to be taken Following Exceedance of Trigger Levels
Visual Inspection of Particulate Emissions	Moderate (3)	1st Trigger Level Site manager to identify source(s), review process and take necessary preventative or corrective action.
	Serious (4) Major (5)	2nd Trigger Level Site manager to instruct modification to or suspension of any operation or process causing visible dust emissions.

Table 2: Trigger Levels and Actions

Building/area of work	Method	Dust Suppression
Groundworks	Reduce dig, Piling, Drainage, CFA and piling activity.	Monitor using dust, noise and vibration monitoring equipment and visual inspection. Spray Water where required
Superstructure	Concrete Frame, material deliveries.	Visual inspection Spray Water where required
Landscape	Materials delivery, spreading of materials, reduce dig.	Visual Inspection Spray Water where required

Table 3: Summary of Likely Dust Generating Works

Mitigation Measures

The following mitigation measures will be employed during the construction phase of the project to ensure that the impact of on-site activities is reduced to medium or low risk.

Site Planning

- The name and contact details of the person accountable for air quality and dust issues (i.e. the environment manager/engineer or site manager) will be displayed on the site boundary;
- The head or regional office contact information will be displayed on the site boundary;
- Solid barriers to site boundary will be erected;
- No bonfires are permitted;
- Plan site layout – machinery and dust causing activities away from sensitive receptors;
- All site personnel are to be fully trained;
- Hard surface haul routes will be utilised where practical.
- Site fencing, barriers and scaffolding will be kept clean using wet methods;
- Bag and remove biological debris or damp down such material before demolition;
- An adequate water supply will be available on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;

- Enclosed chutes and conveyors and covered skips will be utilised;
- Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised and fine water sprays on such equipment will be used wherever appropriate.

Construction Traffic

- All vehicles to switch off engines;
- Site speed limit of 5mph will be enforced;
- Effective cleaning and wheel washing on leaving site;
- All loads entering the site are to be covered;
- No run-off of site water or mud;
- All plant on site to regularly maintained and appropriate filters in place;
- Regulate movement of construction traffic onsite;
- Ensure that onsite haul routes are effectively maintained and kept clean.

Site Activities

- Minimise dust generating activities;
- Use water as dust suppressant where applicable;
- Enclose stockpiles or keep securely sheeted;
- Re-vegetate earthworks and exposed areas as early as possible during the construction process;
- Effective water suppression will be used during demolition operations;
- Ensure that any concrete crushers are licenced and comply with current regulations;
- Materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site. If being re-used on site, cover as detailed below;
- Buildings will be soft stripped inside before demolition;
- Equipment should be readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- Sand and other aggregates should be stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

Site Recording

- All dust and air quality complaints will be recorded, cause identified and appropriate measures taken to reduce emissions in a timely manner. Measures taken will be recorded;
- The complaints log will be made available to the local authority when asked;
- Any exceptional incidents will be recorded which cause dust and/or air emissions, either on- or off- site and the action taken to resolve the situation recorded in the log book;
- Regular site inspections will be undertaken to monitor compliance with the DMP, record inspection results and make inspection log available to LBR when asked;
- Site inspections will be increased in frequency by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged periods of dry or windy conditions;
- Daily on-site and off-site inspection will be undertaken, where receptors area nearby, to monitor, record inspection results and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary;

- All inspections of haul routes and any subsequent action will be recorded in a site log book.

2.16 Noise & Vibration Control

Noise and vibration from construction operations have the potential to disrupt and cause annoyance to the adjacent neighbourhood. It is therefore vital on a construction project of this size and duration to minimise any such disruption. Through careful planning, activities likely to cause concern can be identified to allow for suitable mitigation to be applied. Specific noise and nuisance avoidance plans are shown in Appendix B.

The following table summarises the anticipated noise levels generated from plant during the construction process.

Ref	Plant – Description	A-weighted Sound Pressure Level LAeq dB
1.	30t Excavator	82
2.	Dumper truck – general site clearance	80
3.	Mobile crane 50t	67
4.	Scissor lift	78
5.	Concrete truck (dis-charging)	75
6.	Concrete pump	67
7.	Delivery vehicle	75
8.	Generator	55

Table 4: Average Sound Level

Based on the above figures it is anticipated that the average sound pressure levels will be no greater than 75dB (A) during the permitted working hours.

75 dB(A) LAeq (10hr) Monday – Friday

Proposals for monitoring noise & vibration and procedures to be put in place, where agreed noise levels are exceeded

It is proposed that noise & vibration monitoring is carried out on site once operations are underway to ensure that the agreed levels are not exceeded. These will be regularly monitored by the site management team at set locations near sensitive receptors and records maintained. In the event that levels are exceeded, the following procedures will be put in place by the site management team:

1. Quickly assess the seriousness of the problem.
2. Contact the complainant and consider their views and advise how we propose to the situation.
3. Cease the activity causing the problem until preventative measures have been taken to control the situation.
4. Continue to take noise readings of the incident to demonstrate the effects of the improvements made.

Building/area of work	Method	Mitigation
Groundworks	Moving Materials, pouring concrete, piling, CFA piling. Breaking out tarmac.	Monitor using noise and vibration equipment. Stop immediately if agreed levels are exceeded.
Superstructure	Cutting steel, pouring concrete.	Monitor using handheld noise meter. Stop immediately if agreed levels are exceeded
Landscape	Materials delivery, spreading of materials.	Monitor using handheld noise meter. Stop immediately if agreed levels are exceeded

Table 5: Summary of Noise and Vibration Works

Mitigation Measures

The following mitigation measures, as suggested in BS 5228, will be employed to lessen the noise and vibration impacts during the demolition and construction phase.

Community Relations

The establishment and maintenance of good community relations will be a priority (see section 2.18 below). This will include informing local residents on progress of the works by way of leaflet drops and/or public meetings and ensuring measures are put in place to minimise noise impacts. A telephone “hot line” and agreed procedure for the contractor to investigate and report on complaints will be set up.

The council shall be given 28 days notice of times and dates of crane rigging and de-rigging by the contractor.

Training of Employees

Operatives will be trained to employ appropriate techniques to keep site noise to a minimum and should be effectively supervised to ensure that best working practice in respect of noise reduction is followed.

Execution of Works

Practicable measures to manage construction noise and vibration impacts which will be undertaken during these works include the following:

- The hours of working should be planned and account should be taken of the effects of noise upon persons in areas surrounding site operations and upon persons working on site, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods.
- On-site noise & vibration levels will be monitored regularly, particularly if changes in machinery or project designs are introduced, by a suitably qualified person appointed specifically for the purpose. A method of noise and vibration measurement should be agreed prior to commencement of site works.

- On those parts of a site where high levels of noise are likely to be a hazard to persons working on the site, prominent warning notices should be displayed and, where necessary, ear protectors should be provided.

Control of Noise at Source

Noise from existing plant and equipment can sometimes be reduced by modification or by the application of improved sound reduction methods after consultation with the manufacturer.

Care should be taken to locate equipment away from noise-sensitive areas. Machines and plant should not be left running unnecessarily, as this can be noisy and waste energy. Plant known to emit noise strongly in one direction should, when possible, be orientated so that the noise is directed away from noise-sensitive areas. Acoustic covers to engines should be kept closed when the engines are in use and idling. Materials should be lowered whenever practicable and should not be dropped.

Regular and effective maintenance by trained personnel is essential and will do much to reduce noise from machinery. Increases in plant noise are often indicative of future mechanical failure.

Controlling the Spread of Noise

If noisy processes can be avoided, then the amount of noise reaching the neighbourhood should be limited. Alternative ways of doing this are either to increase the distance between the noise source and the listener or to introduce noise reduction screens.

Increasing distance is often the most effective method of controlling noise. However, this may not be possible when work takes place on a restricted site.

An approved strategy and details will be approved by the planning authority. Where possible / practical material stockpiles can be strategically placed to provide an additional barrier.

2.17 Safety

Full recognition and regard will be taken in the management and execution of the project of the Construction Design and Management Regulations 2015.

All trade contractors are obliged to provide safety policies, plans and method statements and will be interviewed prior to order placement on all aspects of safety, health and welfare.

All sites are subject to independent site safety checks, inspection and reports by our independent site safety inspectors and advisors.

Employer's direct contractors will be required to accord and be subject to the same safety procedures and requirements as the contractors' own trade contractors and operatives, as outlined above.

Safety inspections will also include the works of the employer's direct contractors if appropriate.

With regard to road safety measures, where possible the contractor will seek to use contractors who are registered on the FORS (Fleet Operator Recognition Scheme) system. In addition, where possible contractor vehicles will include side-bars, blind spot mirrors and detection equipment.

The route to the nearest hospital offering A&E services is shown in Appendix E.

2.18 Environmental and Biodiversity

Ecology, bat and arboricultural surveys will be undertaken and any findings will be fed into the design process for any impacts to be assessed. Any actions required during the works will be implemented and monitored.

The protection of trees and tree roots will be taken into consideration. A method statement will be produced and will be followed to manage the trees within the construction area.

Full project specific Environmental and Site Waste Management Plans will be developed and presented for LBRUT approval.

The table below shows all surveys carried out to ensure the protection of ecological features:

Survey	By Whom	Date
Phase 1 ecology habitat survey	Ecology Consultancy	June 2016
Breeding bird / bat survey and Bat emergence survey	Ecology Consultancy	May 2017
Arboricultural Method Statement	Raphael Skerratt	June 2017

Table 6: Summary of Surveys

2.19 Community Engagement / Considerate Constructors Scheme

A multi-level approach to planning a community engagement will take into account a range of long term and short term engagements as befitting the location. Some ideas of what Community Engagement may involve are:

- Newsletters;
- Coffee mornings / open evenings;
- Open site;
- Supervised school visits;
- “Open door” policy;
- Construction Ambassador Scheme;
- Charity events.

A community liaison manager will be appointed on site who will make sure the lines of communications are kept open and there is constant dialogue. The site’s 24hr emergency number will be displayed on the site hoarding and distributed to the local neighbours.

Wherever possible, consideration will be given to pre-fabrication of components off site prior to delivery to minimise potential disturbance caused by construction traffic.

The working site will be kept clean and in good order at all times. Surplus materials and rubbish will not be allowed to accumulate on the site or spill over into the surroundings.

Respectable and safe standards of dress will be maintained at all times. Lewd or derogatory behaviour and language will not be tolerated under threat of severe disciplinary action.

A banksman / logistics manager will be employed who will manage all deliveries to site.

A detailed traffic management plan will be implemented and issued to all sub-contractors and managed by our Banksman / Logistics Manager, whose duties will include:

- Giving priority to local residents & traffic;
- Managing / collating the delivery booking in process;
- Approved deliveries to site will contact the logistics manager in advance of their arrival to allow the site to prepare the delivery area and advise the driver of any issues.;
- Ensuring vehicle engines are switched off while parking;
- Banking & reversing vehicles where necessary;
- Ensuring vehicle wheels are clean prior to leaving the construction area during groundworks phase;
- Ensuring vehicles are only using designated routes and not causing nuisance parking.

The contractor will register with the Considerate Constructors Scheme, which is a voluntary scheme in which construction sites agree to abide by the Code of Considerate Practice, designed to encourage best practice beyond statutory requirements. The Code of Considerate Practice is included in Appendix G.

2.20 Local Spend

Where possible, local contractors will be selected, enhancing the value of 'local pound' expenditure.

Locating and engaging services locally is a key part of the commitment required from labour trades on site but this extends beyond the immediate site boundaries into the community and local business structure.

Reasonable commercial endeavours will ensure that some of the construction jobs in relation to the project are filled by residents of the London Boroughs of Richmond upon Thames, Hounslow, Kingston upon Thames, Wandsworth, Elmbridge and Spelthorne District Councils.

Local training providers will be engaged with the focus to put forward local candidates.

3 CONSTRUCTION METHODOLOGY

3.1 Instruction and Construction Phasing

As discussed in section 2, the works will be completed in a number of phases following an initial demolition project. The phases will include:

- d. Enabling Infrastructure Relocation Works – moving the existing electrical substation
- e. Phase 1 site – Site south of the current service road
- f. Phase 2 site – Site North of the current service road

This section summaries the construction methods and materials used in order to complete this project and outlines where further safety or method statements will be required.

The construction programme and phasing diagram is included as Appendix A.

3.2 Enabling Infrastructure Relocation Works

Prior to the commencement of the main building works but after the initial demolition project has been completed, a new electrical substation will be installed by UK Power Networks (UKPN). The new substation will serve the properties connected to the existing substation located on the site and the new development. Following energisation and reconnections of the new substation, the existing substation will be decommissioned and removed.

3.3 Main Construction Phases (Phases 1 & 2)

The sequencing, phasing and methodology for both primary phases of the project will be broadly similar and approximately follow the methodology set out below. The exception being that phase 2 does not include a lower ground floor car park.

Initial Site Setup

Initial construction activities commence with the erection of site safety hoarding and the establishment of the site compound and offices as shown in Appendix C.

A full dilapidation survey of the surrounding infrastructure will be completed prior to any construction works being undertaken, any damaged caused as a direct result of the construction process will be repaired as required.

A small office and welfare unit will be provided during the groundworks phase with the main site offices being set-up once the underground car park and podium have been completed. There will be separate site vehicle and pedestrian gates into the contractor's site compound area.

Ground Remediation and Reduced Level Dig

Following the establishment of the site, vegetation, top soil and remaining above ground structures will be removed. Following the installation of a piled retaining wall, the ground levels will be reduced as required including any remediation / recycling of earthworks. Earthmoving plant and equipment will be utilised which corresponds with the quantity of soil to be relocated, the quantity of soil to be removed from site and the timescale within which the operation requires completion.

Substructure

The lower ground floor car park raft slab will be installed in combination with the underfloor services, followed by the supporting columns for the podium / ground floor level of the phase 1 development

The podium deck and ground floor slabs of the buildings will be poured. Once this work has been completed the formal site compound and offices as shown in Appendix C will be established. The lower ground floor will be utilised for site storage during the construction works.

Superstructure

At this stage of the design it has been assumed that the structure will be a concrete frame erected by a specialist subcontractor using a mobile / static crane.

A detailed method statement for concrete frame erection will be produced by the works contractor prior to commencement. Edge protection will be cast into the build as the works progress.

Envelope

The external walls will be installed from either fixed independent scaffold and/or mobile elevating platforms depending on special constraints. This will be undertaken concurrently with the roofing works.

The windows will be installed as soon as possible once the external walling has been erected. This will create a weather tight environment within the building for the installation of internal services and finishing works.

Internal Work

The internal partitions will initially be erected on the upper floors, followed by the lower floors, once the high level services within the ceiling void have been installed. Generally only one side of the partition will be boarded at this stage. This will allow internal fixings and services to be installed before they are enclosed on the plasterboard on other side.

Internal carcass and first fixing by the finishing trades will commence once a weather tight environment has been achieved within the new building. Where necessary temporary weathering will be provided to window openings in prevent the ingress of wind and rain into the working area.

The skim plastering of plasterboard on internal walls and partitions will be undertaken progressively as boarding on each floor is completed.

The second fixing by other trades will follow after a suitable period of drying out.

Suspended ceilings, where designed, are to be installed once the high level internal service pipework and trunking has been completed and tested.

The wall and ceiling finishes will be completed before vinyl and carpet floor finishes are laid.

Mechanical / Electrical Services

A detailed fabrication, delivery and installation schedule will be prepared by the mechanical and electrical contractor to ensure compliance with the overall contract programme. Builders work required for the new services will be defined at this stage for inclusion on the structural engineer's construction drawings.

The high level conduits and pipework above ceiling level will be installed from lightweight mobile towers, prior to construction of the internal walls and partitions.

Installation of light fittings, smoke detectors and fire alarm systems will be co-ordinated with the ceiling works. Key dates for power and water supplies to be available within the building will be identified on the programme.

Testing and commissioning of specialist systems will be carried out by the specialist system supplier/installer and all test certificates will be issued.

On completion of the commissioning activities the complete system will be offered for demonstration and witness testing to the client.

Fitting Out / Handover








Temporary protection to floor and wall finishes will be removed once the installation of all fixtures and fittings has been completed.

Snagging, cleaning and inspection will be undertaken room-by-room and once completed each room will be secured in advance of the final handover.

External Works

These works will be carried out as an on-going activity throughout the construction period, upon sufficient completion of the main building envelope. Initial works will include establishing formation level, mains drainage, mains services and base course to surface finishes, with soft landscaping to all areas carried out towards the latter end of the construction period in one operation.

4. Appendices

<p>Appendix A-Construction Programme & Phasing Diagram</p>	 Programme.pdf
<p>Appendix B- Nuisance Avoidance</p>	 Nuisance Avoidance.pdf
<p>Appendix C – Site Set Up Plan</p>	 Site Set Up.pdf
<p>Appendix D – Access Plan</p>	 Site Access.pdf
<p>Appendix E – Route to the Nearest Hospital</p>	 Route to AandE.pdf
<p>Appendix F – The Control of Dust and Emissions from Construction and Demolition Best Practice</p>	 Dust and Emmissions.pdf
<p>Appendix G – Considerate Constructors Scheme</p>	 CCS.pdf