Parker House

Planning & Conservation Area Consent Applications

SD3: Draft Construction Management Plan

Prepared for Camden Council & E C Harris

November 2012

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Construction Management Plan for the redevelopment of Parker House

Draft Issued for Planning

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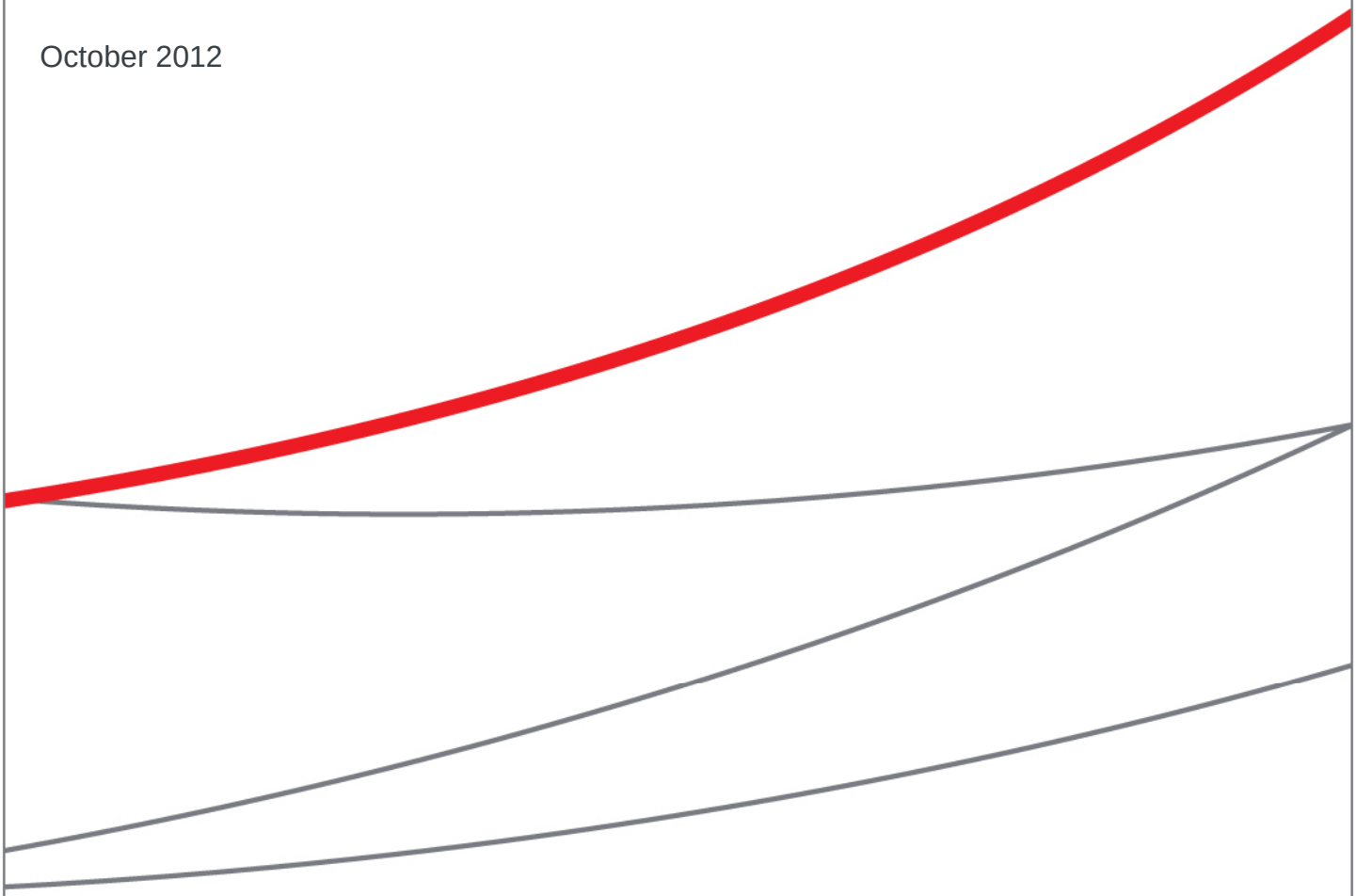

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Contents

Appendices

Background

This report provides a detailed approach for managing the proposed demolition and construction works for the redevelopment of site known as Parker House, 25-37 Parker Street, London and the adjoining Aldwych Workshops.

We have provided our approach for methods of demolition and construction works. In addition we have included the details of any site logistics, environmental control measures that will be deployed during both demolition and construction works.

Vacant possession of the site will be granted prior to demolition and construction works.

An indicative draft High Level Development Programme for demolition and construction works is provided:

- 25-37 Parker Street House, Indicative Draft High Level Master Development Programme - Programme No. 103.01, Revision A, dated (30.07.2012)

The Site Location

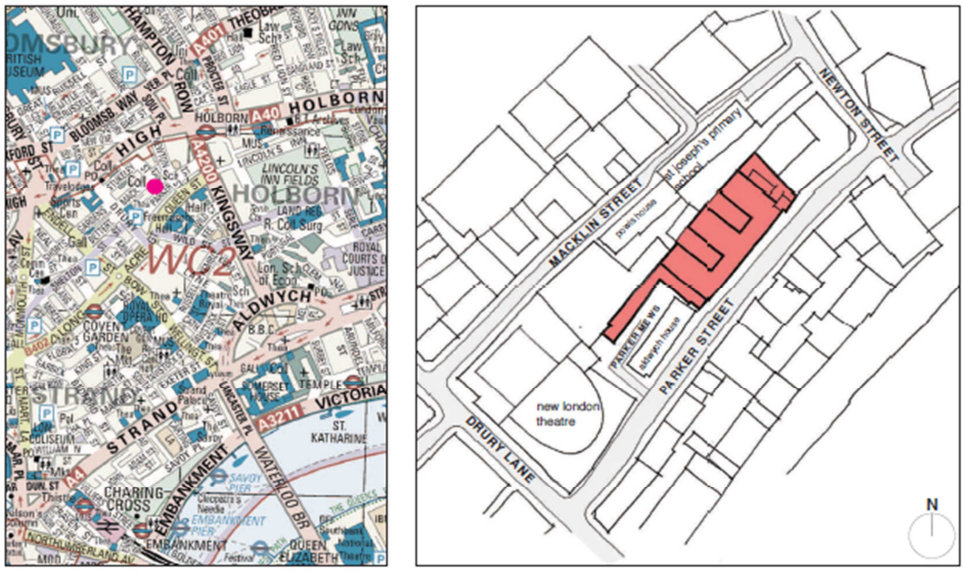
25-37 Parker Street House; a hostel to house the homeless; is located in the Seven Dials Conservation Area of Covent Garden on Parker Street, perpendicular to Drury Lane. It was designed and built for the purposes of a men's lodging house to replace the substandard inner-city living accommodation in 1893.

There are 2 entrances currently in use to access the site; the primary entrance is located on Parker Street, and secondary access via Parker Mews behind the Aldwych Building (1-10 Parker Mews, also owned by Camden Council).

The site is bounded to the South East by Parker Street and to the South West by the Aldwych Building and Parker Mews, to the North East (along Parker Street), the adjacent building is Commercial, and to the North West, the site is bounded by Powis House and St Joseph's School.

Powis House and the Aldwych Building are residential properties; however the majority of buildings along Parker are now denoted for Office and Commercial use.

With very close proximity to Holborn and Covent Garden Underground Stations, the site has no off-street vehicular accommodation.



The Site Location

Demolition and Construction Development

The project delivery for demolition and construction works would involve the following key stages:

- Vacant possession of site;
- Full photographic survey of surrounding footpaths and roads;
- Security & service disconnection;
- Initial build contractor's site establishment;
- Site establishment – Basement (On completion of frame construction);
- Scaffolding & gantry;
- Facade retention system;
- Demolition works;
- Substructure construction;
- Superstructure construction;
- External cladding and roof;
- Fit out;
- External works;
- Testing and commissioning; and
- Project completion

Demolition Method

The precise method of demolition will be established with the build contractor after careful examination of the existing structures and adjacent neighbouring properties.

The proposed method of demolition will be geared primarily to safety, but equally to minimise the environmental impact of the works generally. Particular consideration will be given to the safety of operatives, general public, children, visitors, the adjacent neighbouring buildings and etc. Particular attention will be given to the transport with respect of local residents, St Josephs's school and local road networks.

The typical demolition sequence can be summarised as:

- Set-up and secure the site with hoarding;
- Disconnect main incoming services;
- Carry out condition verification and ambient noise surveys;
- Install noise, vibration and air quality monitoring equipment;
- Install Layher Protect System (or similar) noise insulating protection to the perimeter of the site area.
- Re-route existing services;
- Whilst the removal of potential hazardous substances and soft strip works progresses internally, the external building perimeters will be retained by facade retention systems, gantry / scaffolding sheeted and protection applied in preparation for main demolition works. In addition scaffolding with external protection fans will be erected to protect occupiers, third parties and etc;
- Demolish building structure down to ground level; and
- Complete demolitions and site clearance

Aldwych Workshops

As part of the work, the existing Aldwych Workshops will be demolished and new residential accommodation constructed in its place that meets modern standards. Aldwych Buildings shares a common courtyard with the Workshops and any impact of the works on residents will need to be mitigated by the Contractor. During the works the Contractor will take all reasonable measures to minimise noise and disruption to the existing residents. Furthermore the Contractor will put in place a Resident Liaison Officer and a strategy for regular consultation and engagement with residents prior to and during the works so that any issues can be quickly addressed.

Existing residents and visitors will be protected from noise and disturbance by a Layher Protect System (or similar) noise insulating protection and timber hoarding.

The Council will service notice on those existing residents currently using the Workshops for storage at least 4 weeks prior to commencement of works on site. New secure storage facilities for residents of Aldwych Buildings are to be provided as part of the development proposals.

Removal of Potential hazardous Substances & Demolition

On commencement of the works the identification and isolation of local services will be undertaken. All classified potential substances will be double bagged and removed in sealed skips where it will be transported off site by road to one of a number of licensed hazardous substances tips. Hazardous substances consignment notes will record all waste before it leaves the site.

On completion of the hazardous substances removal, the hazardous substances enclosure will be cleaned and the area tested with samples taken to ensure all hazardous substances particles have been removed. The enclosure can then be removed and the area handed over to the demolition team for soft strip and hard demolition.

Demolition of Existing Buildings

The facade retention system to be installed and fixed through localised penetrations within the facade by means of mechanical fixings.

To control dust emissions during the works, scaffold will be fully sheeted in fire retardant plastic sheeting. In addition to this, the excavators will also be fitted with boom and dipper arm mounted water spray attachments that spray water directly onto the work area. The water will be supplied from temporary water supplies on site.

In general, demolition works will be undertaken by large reach excavators mounted with hydraulic shears and crackers that will systematically cut the masonry and reinforced concrete into manageable sections which in turn will be stockpiled. In addition, mini excavators fitted with hydraulic breakers will be used for the demolition will be lifted to the roof level.

Walls tied to the external facade are to be separated carefully from the works, using non-percussive tools; final trim up will be carried out by operatives using hand held tools where necessary to ensure protection of retained facades. Operatives will be rotated regularly to combat vibrating white finger syndrome.

A series of targets will be inserted so that the retained facade can be monitored regularly for movement throughout the demolition works.

Demolition arising will be removed by a 360-degree excavator and then be loaded into roll on off bins and skips by secondary excavators fitted with grapple / bucket attachments for transportation off site to recycling facilities.

The programme for facade retention and demolition works can only be indicative at this stage. However, a period of circa 7 months should be adequate for hazardous substances removal, strip out, installation of facade retention systems and demolition works.

The Strip Out and Demolition Zone – (25-37 Parker Street House)

Construction Method

Site Establishment & Enabling Works

The build contractor will set up the initial site accommodation and welfare facilities on the gantry scaffold over the 25-37 Parker Street House pavement, including temporary services. On completion of demolition, basement and frame construction works, the build contractor will then transfer its site establishment to the basement level.

Substructure Construction

On completion of demolition works, it is planned to commence pile probing and using recycled crushed demolition materials for piling mat prior to construction of internal rotary piles.

The substructure consists of secant piled perimeter walls and bored piles with pile caps and ground beams that support columns for the structures above.

As the construction of the secant piles is underway, hydraulic excavators and wheeled tipper trucks will be used in the substructure construction by stripping the existing surface materials, followed by bulk excavation down to the formation level. Recycled crushed demolition materials will be tipped, spread and rolled in layers using 12 tonne vibration rollers to form a fully compacted, structural and level piling mat, on which piled foundations can be built.

As bulk excavation is underway, piling rigs using rotary augurs will be used to construct the piles.

On completion of a single bay of piling, concrete substructure works will be undertaken commencing with the construction of the pile caps, ground beams, lift pits, under slab drainage and services and followed by the basement slab.

In addition bases for tower crane/s will be located over the basement area. Tower crane/s will be utilised for lifting rebar and concrete pouring to from the pile caps and basement slab. It is anticipated that ready mix lorries will be able to enter the basement via a temporary ramp and concrete will be poured using concrete skips or pumps.

After sections of concrete basement have been cured, reinforced concrete columns will be constructed from the basement slab and will support the ground floor transfer and podium slabs.

Superstructure and Roof Construction

Reinforced Concrete Frame Construction

The proposed structural system to each block comprises reinforced concrete columns and flat slabs from ground floor to roof level subject to design development.

Tower crane/s will be used to lift rebar, erect working platforms, formwork and pure concrete on Ground floor level. After fixing of reinforcement, column formworks will be erected and concrete poured from columns at Ground floor level. Then slab formwork for the first floor slab will be erected to receive reinforcement and concrete. After curing in accordance with the structural engineer's specifications and drawings, the shutters will be stripped and Ground floor back propped to allow the first floor columns to be constructed. The construction sequence of Ground floor is then repeated to the roof level.

As the construction of reinforced concrete frame is commencing on 3rd floor level, this will enable the first fix for mechanical, electrical and plumbing services to commence from ground level to upper levels.

In addition the construction of internal blockwork party and perimeter partitions could commence too, in line with first fix mechanical and electrical services. This process will repeat to upper floor levels.

Passenger and goods hoists will be erected to access each individual floor level within the block.

External Cladding

The external cladding to the buildings comprises of double skin facade. The installation of first fix brackets for external cladding will commence as the construction of reinforced concrete frame is commencing on fifth floor level and continuing towards upper levels. The brackets are installed and bolted to the concrete slab edges at each floor level.

On completion of the reinforced concrete frame cladding components will be installed from ground floor level to upper floor levels using the tower crane/s.

The external cladding units are delivered to site by flat bed articulated lorries and then the units will be lifted into position by tower cranes for installation on a floor-by-floor basis.

Fit Out Works

The internal fit out works to the apartments and communal areas will commence from ground floor level and continue to upper floor levels.

As soon as, the external cladding is complete on the ground floor the fit out works will commence.

Typical internal fit out to each individual apartment consists of:

- First fix M&E services, e.g. plumbing & cabling;
- Plasterboard division partitions & ceilings;
- Plastering to walls & ceilings;
- Mist coat;
- First fix joinery;
- Installation of bath & shower units;
- Fit out of bathrooms & kitchens;
- Timber floor finishes to e.g. living rooms;
- Second fix joinery;
- M&E second fix services;
- Main-power-on date;
- Painting & decoration;
- Final minor finishes;
- Installation of fixtures & fittings;
- Builders clean;
- Snagging;
- Testing & commissioning;

- Final clean;
- External Works; and
- Handover

Based on our experience of similar schemes in order to maintain the enhancement of high quality of internal finishes we have allowed 18 week fit out period per each apartment unit and completion of 4 No. per week.

External hoists will enable access, distribution of operatives, materials and waste to each individual floor level for internal fit out.

External Works

The external works will commence when external cladding is substantially complete. The external works will be complete before occupation.

Site Logistic Consideration

The build contractor will be responsible for planning and execution of the demolition and construction works, including site establishment and site logistics methodology plans.

A weekly co-ordination meeting will be held between the build contractor, sub-contractors and third parties. The agenda should cover the interface/co-ordination of the site logistical issues as well as the management of local residents, all stakeholders and etc.

Initially, the purpose of the site logistics strategy is to identify the specific conditions that exist on site which will have an impact upon the works during the project delivery.

In addition, the strategy should look at the potential impact that the works may have upon the adjacent neighbouring properties, road networks and etc.

The logistical methodology plan will communicate the proposed logical solutions to the professional team, sub-contractors, third parties and etc in order that each party could make due allowances in their design, planning and etc.

Site Establishment

Prior to any works being undertaken and following receipt of the relevant approvals and licenses, the perimeter of the site boundary will be hoarded. Entrance gate/s and security facilities would be installed in the hoarding.

We propose initially to install a secure hoarding around the perimeter of the works. The hoarding will be erected to reduce the visual impact and noise transmission of the construction activities at the ground level, as well as to secure the site. The hoarding will be approximately 2.4m high, adequately lit and statutory safety signage.

The hoarding will be branded and maintained to the highest standard throughout the project. As part of our engagement with the local community, including schools, colleges and local residents, we would instigate a competition to create a hoarding design. We propose to insert protective vision panels within hoardings in order for local residents and general public to view the progress of the works on site.

All plywood hoarding will be painted and maintained in a clean and safe condition by regular cleaning and removal of all graffiti or fly-posters.

The lighting to site will be provided with sufficient illumination for safe demolition and construction works and in addition to the safety and comfort of the passing public. The lighting will be installed to minimise nuisance to local residents or adjacent properties to reduce distraction or confusion to passing traffic on adjoining public highways.

The build contractor will set up the site office and welfare facilities and temporary services.

The site establishment shall include site office and welfare facilities for the site management, construction operatives, client and third parties. Temporary power, water, telephony and drainage supplies would be fed off existing services until new services are available.

Access will not be permitted to site until each operative, third party and etc has completed the site induction at which point they will be issued with a photo identification document.

Once the induction has been completed operatives will be directed to the site welfare facilities via the safe access route. Full facilities will be available to allow operatives to get changed into their work clothes ready to work. The site set up will allow for a co-located project office for both the client team and the build contractor which allows for open communication and a teamwork relationship; there will also be a sub-contractor office, mock up & sample room and meeting rooms.

Construction Workforce

We estimate that the total average daily workforce for the project is expected to be in the order of 150 operatives peaking at approximately 250.

Working Hours

The standard construction working hours are from 08:00 - 18:00 hours, Monday to Friday and 08.00 - 12.00 hours on Saturday. Based on our experience of similar schemes the hours of the works are dependent on the Planning Conditions and Section 106 Agreements and the build contractor will adhere to these conditions.

Site Communication

Site communication should be planned by provision of two way radios, notice board and etc. The Communication Plan will establish these requirements.

Security

Provision of site security guards during project to secure site will be considered. Provision of 24 hour contact number for local neighbours and etc for construction works and site security will be considered.

Programme and Site Layouts

The build contractor will update on regular basis the procurement, construction programmes and site layouts in advance of the work phases in order to pre-plan site logistics requirements.

Resident Liaison Officer

Such works may cause inconvenience to the local residents and the build contractor will develop a philosophy for minimising any inconvenience to the neighbouring properties and etc.

The philosophy recognises the need for detailed liaison between the build contractor and neighbouring properties etc. To meet this requirement we propose the build contractor develops a management function of Resident Officer. The proposal for carrying out the liaison duties will be to make the build contractor responsible for liaison to ensure that smooth communications are maintained throughout the project with the neighbouring properties, client and etc.

Liaison Duties

It is essential that the neighbouring properties have an easily identifiable point of focus to air their views during the project delivery. To achieve this goal, Resident Liaison Officer will be resident on site throughout the project period and will be named as the contact for residents and etc.

Key steps will be taken to ensure that a coherent management plan is developed for the project including:-

a) The team with work closely will all project stakeholders and local residents in order to address the following:-

- The project parameters;

- Lines of communication;
- Brief description;
- Time scale and methods;
- Areas of operations;
- Security;
- Site cleanliness;
- Significant activities; and
- Positively address any questions or concerns expressed by residents regarding the site;

b) Prior to contract commencement prepare and implement in association with the residents, Client and his representatives, a procedures plan for co-operation between all parties concerned and the local residents;

c) Establish a Project Information Centre within the site boundary. The Information Centre would also act as the point focus for residents, where visual displays and regular bulletins will be used to illustrate the intent of the project;

d) Maintain regular meetings with local residents, especially during the pre-lead period to explain how works are to be carried out;

E) Notification to local residents of impending works;

f) Liaison between local resident and the build contractor of specialist deliveries and functions;

g) Maintain liaison at all times between local residents the build contractor regarding matters of concern, ensuring that a satisfactory outcome is achieved; and

h) Inform the status of progress reports of the works to the local residents and etc

Experience has shown us that friction between the Contractor can be avoided by continuing the process of consultation and dialogue and giving adequate prior notice of any significant operation and phasing of the works and not to ignore the needs of the residents and etc.

Public Relations

The area in vicinity of the Parker Street House site is predominately a mix of residential and commercial uses.

The nature of the works being undertaken and the arrangement of deliveries mean that the impact on the neighbours will need to be stringently managed.

Our aim is to reduce this impact throughout the project through use of clear information and reporting methods, exemplary external housekeeping and satisfactory response to any queries raised. We propose developing and issuing a newsletter / poster to local businesses, neighbouring buildings and school. This will provide useful information about the Considerate Constructors approach and contact details for both the build contractor and construction team should any concerns need to be raised. The build contractor contact numbers will also be clearly displayed at the site entrance and security areas.

During the works, there should be regular communications with neighbouring residents. A monthly newsletter will be considered to the surrounding residents to keep all parties informed about progress to date and forthcoming works.

The ultimate aim of the document is to be informative to the local residents and businesses and to make the build contractor approachable when they need to engage with local residents and etc.

A complaints register will be established to provide a permanent record of the performance of the project. Any complaint from residents or other parties will be treated seriously, and complaint logged and cause investigated. The outcome should allow procedures to be implemented with the aim of avoiding any recurrence.

Fire Plan

Hot work permits, fire safety systems, means of escape, fire escape routes and other measure will be considered for the protection of the neighbouring buildings and the proposed scheme during the project delivery.

Permit to Access System

The build contractor will establish a permit to access working system for all project phases and areas.

Health and Safety

Health and safety issues on this project are a fundamental factor in influencing the demolition, construction methods and programming/sequencing of the project and occupation, due to the size of the project and the number of vehicular and pedestrian movements associated with workforce should be created, together with the public traffic in the surrounding areas. The Health & Safety Plan will establish these requirements.

For each phase of works the Environmental Health & Safety Plans will be developed in accordance with general provisions. Housekeeping will be given a high priority.

COSHH Control

The strategy for controlling of all substances and materials coming onto site and all work activities and progress which generate hazardous substances should be managed and controlled in accordance with COSHH requirements.

Emergency Response Procedures

Provisions will be put in place to deal with:

- Spills or discharge to atmosphere, water supplies, sewerage systems or ground;
- Damage to existing;
- Keep site and surrounding areas clean; and
- Provide site information & viewing facilities

Emergency Fire & Accident Procedures

The build contractor will consider providing fire drills training and use of non-flammable fire resistant materials.

Vehicular Access

As demolition and construction works progress, access and egress to and from different areas of the site will be subject to change and development in line with ongoing site activities. This is particularly relevant during the early services diversions, demolition and substructure phases of the project.

Discussions will be held with Highways Department, Transport for London, Police, Hospital, School and all other stakeholders with regard to access routes well in advance of specific works being undertaken.

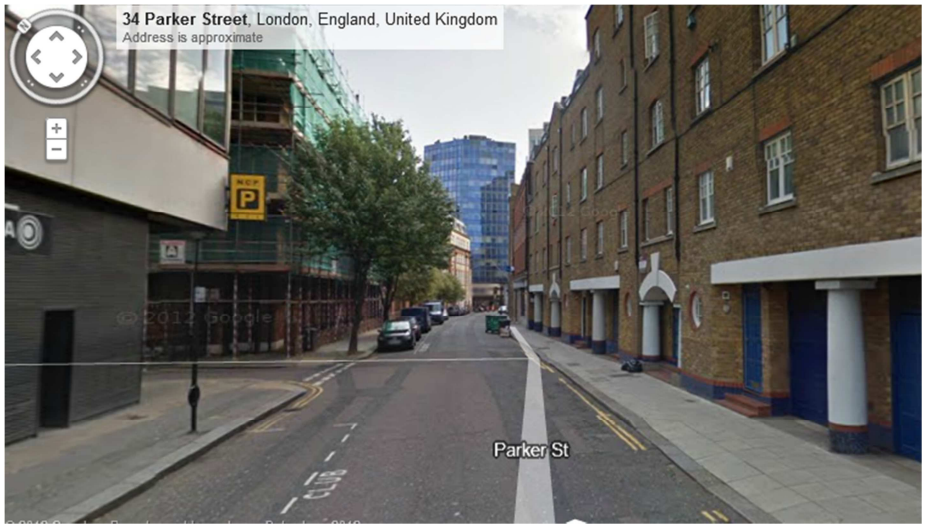
We have studied and analysed the surrounding roads to 25-37 Parker Street House. Our review shows that:-

- **Parker Street:** Mixture of residential, retail, commercial businesses and theatre;

- **Newton Street:** Mixture of residential, retail and commercial businesses;

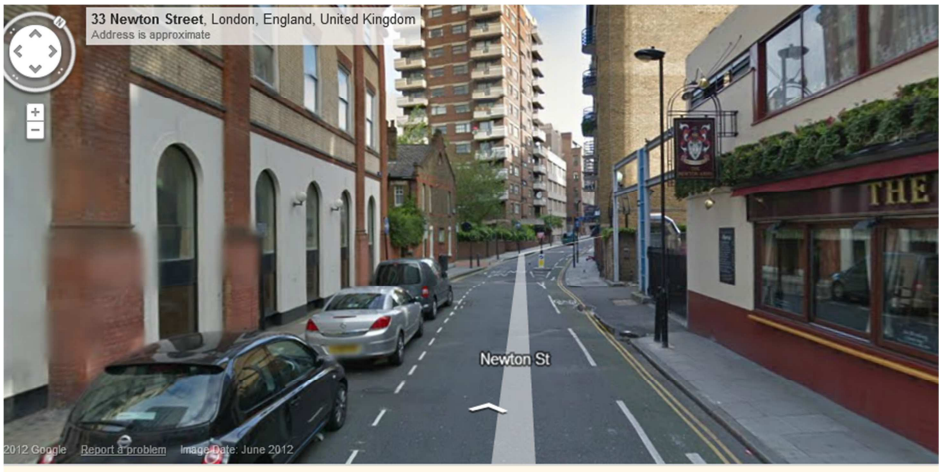
- **Drury Lane:** Mixture of residential, retail and commercial businesses;
- **Macklin Street:** Mixture of residential, retail, commercial businesses & school;
- **Kingsway**: Mixture of retail, commercial businesses, church & etc;
- **High Holborn:** Mixture of retail, commercial businesses, Holborn Underground Station & etc; and
- **Long Acre:** Mixture of retail, commercial businesses, Covent Garden Underground Station & etc

Our analysis shows that the only current access to Parker Street House site is through serious of narrow roads.



Parker Street

Drury Lane



Newton Street

Macklin Street

We are aware of potential future development on Newton Street therefore in order to minimise disturbance to neighbouring properties, local retail, commercial businesses, public transport and etc we propose to create temporary one-way main site entrance system subject to approval from Camden Council.

The temporary site access to be located off Parker Street with secure lockable gate, hoarding, area lit and road safety signage. Security and banksman will be positioned at this point. At end of each working day the gate will be locked. In addition, the area will be surveyed for underground services. On completion of the works the area will be reinstated to existing.

During both demolition and construction works the roads within the vicinity of the site are to be kept clean at all times.

The build contractor will give careful consideration to preventing blocking of any roads to incoming traffic.

Vehicles and other deliveries will arrive at site on a just in time basis where they will drive into site under the control of a banksmen.

Vehicle movements will be kept to a minimum in order to cause the minimum disruption to the local system In addition deliveries will be timed to avoid peak periods of traffic around the site such as school collection and drop off times.

Transport Management during Demolition & Construction

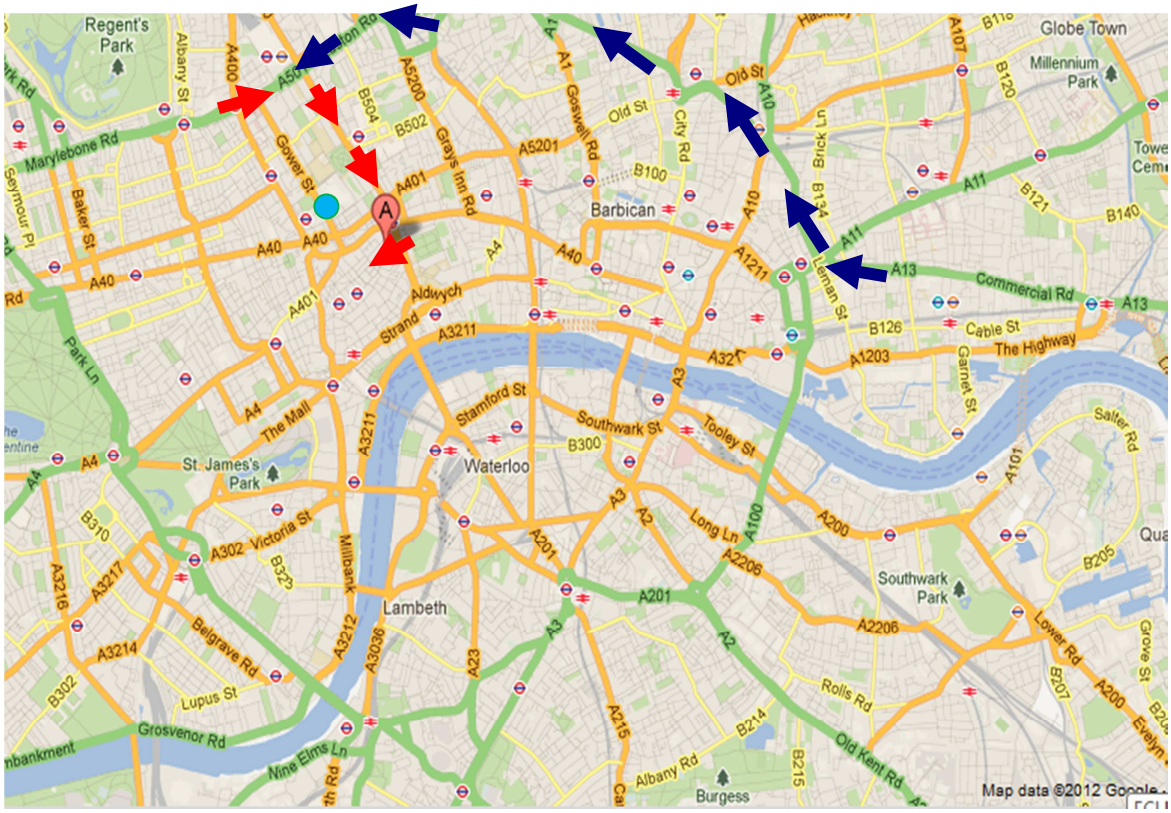
In order to minimise disturbance to local residents there will be no contractor parking on site. The workforce will therefore use public transport Holborn and Covent Garden Underground Stations. In addition the build contractor workforce could utilise the local public buses routes, underground and train stations.

The transport strategy for 25-37 Parker Street House site is to encourage suppliers to approach the site from Euston Road (A501); turning to Upper Woburn Place - Tavistock Square - Russell Square and Southampton Road and Kingsway (A4200) and then turning into Parker Street. See the proposed site route maps.

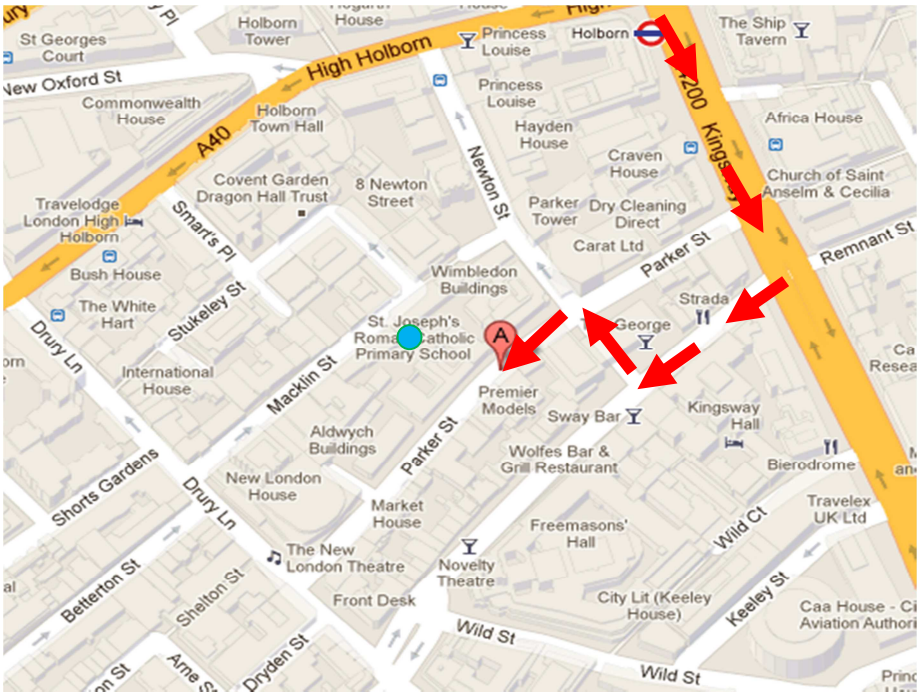
Deliveries will be carefully managed in order to avoid numerous lorry movements in short periods of time.

We estimate daily construction heavy goods vehicles (HGV) movements (a movement relates to one lorry entering then leaving the site) associated with the works are estimated to average approximately 15 per day.

Peak HGV movements are predicated to be 30 per day.



Proposed site access route map from Euston Road (A501 & A4200 to 27-30 Parker Street House and alternative route from Commercial Road (A13 to Euston Road A501)



Proposed site access route to 27-30 Parker Street House

Description	HGV No.
Demolition & plant	350

Hoardings	10
Reduced level excavation	70
Internal piles, rigs & mixer concrete trucks	20
Rebar	52
Mixer concrete trucks	480
Blockwork	15
Roof steel	10
Roof finishes	25
Cladding panels	484
Windows	32
Plasterboard	352
Ceramic tiles	6
Plaster & paint	6
Internal & external doors	34
General carpentry	25
Sanitaryware - Bath & shower trays	8
Sanitary ware - Basin & vanity units	6
Kitchen units	21
Floor finishes	48
MEP	55
External hard landscaping - Paving	21
External soft landscaping	10
Skip - Waste management	750
General Plant, cranes & etc.	30
Total No.	**2641**
Extra allowance (30%)	**793**
Sub-Total	**3434**

Parker Street House – Indicative total number of HGV for Demolition & Construction works

Note on Materials Deliveries

48 hour advance notification for all site deliveries and waste collections. The build contractor must ensure that they are on site to receive, load and unload and check all the deliveries.

Load Consolidation

Load consolidation is the requirement to substantially reduce partially loads lorries and thus increases vehicle utilisation by achieving higher levels of vehicle fill. The build contractor will be expected (under the employer's requirements) to achieve the highest average vehicle utilisation within the site constraints (discussed below).

Measures to Achieve Load Consolidation

- Backloading – This is where suppliers pick up during the same trip as they drop off supplies. In the case of the Parker Street House it is most relevant to the management of on site waste;
- Dedicated deliveries - Sole suppliers for steel reinforcement cages for piles, concrete decking & formwork, steel reinforcement bars, ready mixed concrete lorries, pre-cast slabs & stairs, brick / blockwork, windows and materials for internal finishes can be controlled to ensure that all loads are consolidated by ensuring that the largest permissible lorries and concrete mix lorries are used;
- Maximise permissible carrying capacity - consideration by the build contractor, sub contractors and suppliers should be made to achieve deliveries on the largest possible vehicle in respect of weight and size. In particular a review of double stakcing vehicles should be undertaken. (see constraints below);
- Use of more space efficient packaging and palleting – by the build contractor is required to review the methods of storing materials on vehicles. Key considerations would include, staking height, methods of protection and loading methods;
- Nominated Day Delivery System - we propose that the build contractor will be required to schedule deliveries around certain days and times of the days whereby traffic impact is minimised. This may include deliveries for bulk materials being done at designated “quite times” and should seek confirmation from TFL on available desktop studies on traffic counts for the area;
- Delivery Collaboration – the build contractor will be required to review horizontal collaboration in the freight demands of the job. This will entail approaching key suppliers and sub-contractors and reviewing the possibility of using a joint freight company so that vehicles could be laden with materials from different suppliers and ensure maximum utilisation; and
- Reduction in Just In Time (JIT) – Just In Time delivery has become an essential requirement when working on constrained “island sites” such as Parker Street House. While there will always be a requirement for JIT the contractor will seek to reduce JIT by:

  1. Co-ordinating deliveries to ensure that the material is truly JIT and not a by-product of poor planning; and
  2. Maximising on site storage areas

Key Constraints

- Poor site management - poor material delivery scheduling, poor estimating will lead to partial loads being “couriered” to site on a regular basis;
- Just In Time (JIT) delivery - Site material storage constraints will ensure that there is some requirement for JIT which will increase the frequency of deliveries;
- Vehicle size and weight restrictions – attention should be drawn to any load restrictions on local roads and should be confirmed with TFL prior to initial deliveries. Size of vehicle may also be restricted by local road layouts, turning circles etc;
- Health and Safety Restrictions; and
- Supplier capacity constraints in relation to fleet vehicle size and type – the build contractor should review supplier fleets and logistics prior to entering into a supply agreement

Model Shift

There is two other type of transport available in the area, beside road network – rail and canal. The possible use of rail and canal to deliver materials to site is summarised below:

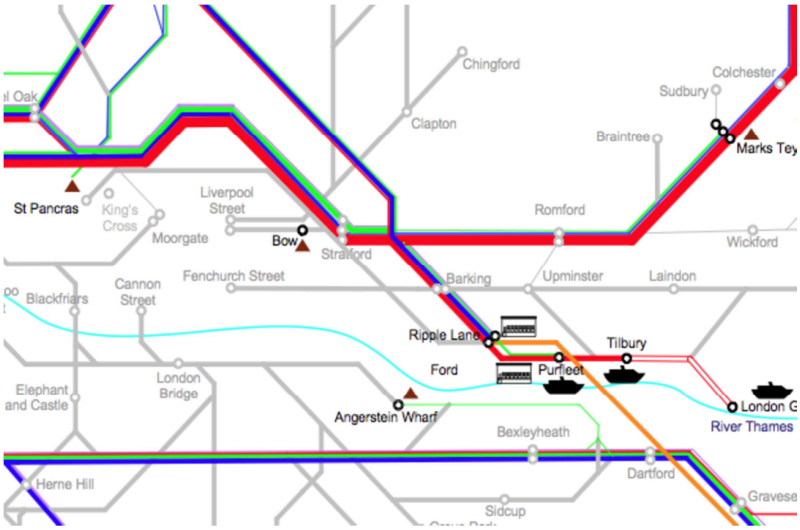
Rail: The West London Line (WLL) runs freight via local terminals at Willesden Junction and Clapham Junction. The nearest local freight terminal is at Paddington which close by road to the Parker Street House site.

Paddington is currently used for inbound construction supplies, predominantly aggregates for concrete and road construction.

The chief issue surrounding the use of rail is the redundancy involved in transporting materials from the local terminal at Paddington to the site. It should be noted that due to this “final mile” stage the benefits of rail freight are negated by the requirement to run an empty lorry to the terminal to pick up the goods for site delivery. In addition this method involves double handling of goods which will likely add offset some of the

carbon footprint savings achieved. It can be concluded that local traffic impact from the construction of the building will remain unchanged should rail freight be used and is largely negated by the proximity of the local concrete batching plant.

Canal: The River Thames is within approximately 1.5 miles from Parker Street House site without any network of canals. We would therefore conclude that due to the lack of local operational wharves within the vicinity of the site that shipping is a non-viable method of freight transportation.



Local Resourcing of Materials

The use of locally sourced materials to reduce transportation miles has been reviewed and the build contractors will, wherever financially possible, source materials from within the Home Counties to avoid unnecessary freight usage. There are three main types of materials used in the construction: concrete, steel, external cladding. The steel can be resourced from within the UK but it is unlikely to be resourced within London. Concrete should be resourced from the nearest bathcing plant to the site (subject to the cost being competitive) and we note that Tarmac and London Concrete have numerous bathcing plants in and around London. Most large suppliers of concrete already ship all their aggregates by rail and sea to reduce road usage.

The external curtain walling is unlikely to be sourced locally, mainly due to the lack of a UK based glass and unitised curtain walling system manufacturer.

Plant Equipment

Table next page provides an indication of the typical plant that will be used during the demolition and construction works on 25-37 Parker Street House site.

Plant & Equipment	Demolition	Substructure	Superstructure	Services & Finishes
Compressors	√	√	√	√
Concrete crusher – Off Site	√	X	X	X

Concrete formwork	X	√	X	X
Concrete & screed pumps	X	√	√	√
Cutters, drills & small tools	√	√	√	√
Dumpers	√	√	X	X
Excavators/breakers	√	√	X	X
Flat bed articulated lorry	√	√	√	√
Flat bed lorry	√	√	√	√
Forklift	√	√	√	√
Floodlights	√	√	√	√
Hoarding & temporary fencing	√	√	√	√
Hydraulic benders & cutters	√	√	√	X
Hydraulic high reach machine	√	X	X	X
Hydraulic working platform	√	X	√	√
Large low loader	√	√	√	√
Large rigid lorries	X	√	√	√
Loading shovel	√	X	X	X
Lorries/vans	√	√	√	√
Mobile cranes	√	X	√	√
Mobile lorry mounted concrete	√	√	√	X
Mobile lorry mounted crane	√	√	√	√
Passenger/goods hoist	X	X	√	√
Piling rig	X	√	X	X
Poker vibrator	X	√	√	X
Ready mixed lorry concrete lorry	X	√	√	X
Rollers	√	√	X	X
Scaffolding, edge protection, mobile Platforms & cradles	√	√	√	√
Scissor lifts	√	X	√	√
Skips	√	√	√	√
Site cabins & welfare facilities	√	√	√	√
Tipper lorry	√	√	X	X
Tower cranes	X	√	√	√
Wheel washing	√	√	X	X

Muck away lorries	√	√	X	X
Telescopic Handlers	X	√	√	√
Tracked Mobile Crane	√	√	√	X
Power Generator	√	√	√	√
Small hand held plant	√	√	√	√

Waste Management and Disposal

Waste will be generated during all stages of the demolition and construction works. Major sources of waste during the construction stage are:

- Demolitions spoil: hazardous materials, concrete, brick rubble, steel, wood etc;
- Packaging: plastic, pallets, expanded foams ;
- Waste materials generated from inaccurate ordering, poor usage, badly stored materials, poor handling and spillage; and
- Dirty water for example from site runoff containing silt

We propose the build contractor to develop detailed proposals for the disposal and management of solid waste created during the demolition and construction works, will form the Site Waste Management Plan for the works.

All relevant sub-contractors will be required to investigate opportunities to minimise waste arising at source and, where such waste generation is unavoidable, they will be required to maximise the recycling and reuse potential of demolition and construction materials. Wherever feasible, such arising will be dealt with in a manner that reduces environmental effects and maximises potential reuse of materials. Recycling of materials will primarily take place off-site where noise and dust are more easily managed and less likely to impact on the occupants of surrounding properties.

A Site Waste Management Plan (SWMP) will be established in order to identify processes required. Waste could potentially be collected daily from site by means of skip or waste vehicles. Waste transfer notes will be held by the build contractor and will fully describe the waste in terms of type, quantity and containment in accordance with relevant regulations.

Recycling of materials will primarily take place off-site where noise and dust are more easily managed and less likely to impact on the occupants of surrounding properties.

Management of Spillages and Site Runoff

Most spills can be prevented with careful handling, storage and use of potential pollutants. Good practice measures that will be undertaken include:

- All flues, oils and chemicals will be stored in secure, appropriate containers, with labels clearly identifying the product;
- All products will be kept in secure storage with integral drip trays (e.g. COSHH cages);
- Containers with more than 200 litres of oil-based products will be provided with secondary containment (e.g. interceptor drip trays) capable of holding 110% of the volume of the container, or 25% of combined volume of the containers, whichever is greatest. They should also be located away from any surface water drains;
- Mobile fuel bowsers will be kept locked when not in use, and any hoses stored within the secondary containment; and
- All hoses associated with delivery of oil or fuel have automatic cut off devices, and will be kept within the secondary containment.

In the event that a spill occurs, the impact will be minimised by prompt and effective action. Spill kits including granules, absorbent pads, absorbent booms and hazardous waste bags shall be provided along with training of staff in their use. All used spill kit material will be disposed of as hazardous waste. Measures for dealing with emergency spillages will need to be included in an Environmental Management Plan.

The operation and refuelling of plant can cause contamination of ground, ground water and surface waters from leaks, drips or spills. Drip trays (interceptor drip trays) will be used under generators, pumps and other plant equipment as determined necessary to protect the ground from oil/ fuel contamination. Smaller, more mobile drip trays will be used when refuelling or carrying out maintenance of larger plant. Maintenance and refuelling of plant will be undertaken in designated areas, within which contingency plans will be implemented to ensure that the risk of spillage is minimised.

Interceptor drip trays will be located on flat surfaces and primed with two to four inches of clean water and drip trays will be emptied before they are moved.

Site Drainage

The control of surface water runoff during the construction phase will be based on best practice guidance provided by the Environmental Agency & CIRIA (Construction Industry Research and Information Association) with systems put in place to ensure suitable treatment and discharge of surface waters.

Surface water drainage from the Parker Street House demolition and construction site will require discharge consent from the Environment Agency with specific limits on the water quality of the discharge. A discharge consent will normally specify pH 6-9, suspended solids <200mg/1, no trace of oils or greases and no poisonous or noxious material.

In order to comply with the conditions of any discharge licence, good practice measures will be adopted including:

- Silt busters or settlement tanks will be used to reduce silt levels from dewatering prior to discharge;
- Keeping all sources of potential pollutants (e.g. flues, chemicals) away from drains on drip trays;
- Underlying regular checks of quality for dewatering water will be undertaken before it is discharged to the drainage system;
- All road ways and vehicle stopping areas will be sealed (for example with tarmac);
- Undertaking of concrete washout in areas with controlled drainage only (i.e. not to surface water drains);
- Surface run-off from all car park and roadway areas will be diverted to Class 1 oil separators with adequate capacity for the anticipated flows. These Class 1 separators will be designed to the standards outlined within Environment Agency Pollution Prevention Guidelines No.3; and
- Road sweeping to control mud on roads

Environmental Management

Environmental Control Measures

The measures described below will be imposed to minimise adverse environmental effects during demolition and construction. The scooping exercise has been undertaken on the basis that these measures will be implemented. An Environmental Management Plan, detailing these environmental control measures will be prepared and adopted and *inter alia* will include sections on: noise, vibration, air quality, water quality, surface quality (prevention of contamination of ground surface), site transportation and traffic management, visual intrusion and waste management. It is currently known that the following will form part of the Environment Management Plan.

Plant and Equipment

- Modern excavators equipped with the latest attachments for crushing and pulverising concrete will keep the use of impact breaking to a minimum;

- A regularly serviced modern lorry fleet will be used for the collection of waste, transportation of plant and equipment; and
- Use of gas powered generators rather than diesel if possible and use of electric equipment and plant rather than diesel/petrol where practicable

Minimising Noise and Vibration

General Provision

Noise and vibration levels will be controlled and consent sought from Camden Council under the Control of Pollution Act 1974, Environmental Protection Act 1990, local policy guidelines and etc to ensure that the Parker Street House site is operated in a way which is not detrimental to the amenities of residents, neighbouring properties and commercial and retail enterprises & etc.

Environmental monitoring measures to be adopted during demolition and construction phase to be included in the Environmental Management Plan. The build contractor will engage the services of a Specialist Consultant to undertake the environmental monitoring of noise and vibration.

All demolition and construction on-off site activities will be undertaken in accordance with Planning Conditions, Section 106 Agreements, construction site rules, agreed working hours and etc.

The Considerate Constructors scheme will be adapted to supplement the procedures outlined above.

Demolition and Construction Noise & Vibration

Estimates of the impact of demolition and construction noise and vibration relating to the 25-37 Parker Street House site would be based on the latest available information. In addition to the normal site noise reduction methods, it must be noted that the physical size of this development is such that the site-generated noise will be attenuated considerably at the perimeter of each phase of the works and the site boundaries. This observation, whilst may be of some comfort to residents, neighbouring properties, commercial and retail enterprises and etc, in no way reduces the contractors' duty to minimise noise generation at source.

Demolition, piling works, excavations, and construction of the frame and cladding will be the most significant construction site activities. The noisiest activities are likely to be piling, excavation, and construction of slabs. Although concreting operations will also give rise to noise, the levels generated would not be considered to be significant.

During the construction above the ground, there will be some noise from formwork erection but the majority of activities and plant (e.g. concrete pumping); cladding installation and internal finishes are considered to generate low noise levels. In addition, the steel reinforcing to the structures could be potentially being prefabricated as much as of a possible to avoid on-site cutting.

Minimising Noise and Vibration

- The monitoring regime will be reviewed with the Camden Council Officers and the appropriate threshold and action levels agreed for the noise and vibration parameters that are to be measured, both pre & post construction. Monitoring locations will be established on and around site and on delivery routes where necessary. On a regular basis the site team will produce reports and arrange meetings with the Camden Council Officers, Health & Safety Executive (HSE), if appropriate and other agreed stakeholders to review the reports, monitor the procedures and review the action plans;
- Weekly monitoring will be carried out both during demolition and construction activities, from previously established and agreed monitoring stations around the development, to ensure that action levels set and agreed have not been exceeded;
- The contractor will develop a neighborhood comment and complaint procedure for recording and dealing with complaints from local residents;
- The build contractor will display regular newsletters and project contact details posted on the notice board in prominent locations around site. This will give local residents a point of contact and should allow to address any nuisance issues that may arise;
- Detailed construction and procurement programmes will be available in advance of work commencing on site;

- Before commencement of works, all site boundaries that may be sensitive to noise or vibration will be identified. All actions that need to be undertaken in order to reduce noise and vibration will be incorporated in method statements, risk assessments and etc;
- Careful consideration should be considered for plant selection, construction methods, programming, implementing a "noise and vibration protocol", which outlines quite periods/monitoring frequency/action levels and etc;
- Noise emission and reduction measures should be considered in advance and noise should be attenuated considerably at site in accordance with both legislation and regulations;
- Where the potential for noise or vibration exists "Best Practicable Means" will be used to reduce noise and vibration to achieve compliance consistent with the recommendations of BS 5228;
- Unless otherwise agreed with Camden Council Officers, noise and vibration values will be predicted in accordance with the methods set out in and the requirements of BS 5228 – Noise Control on Construction and Open Sites. In addition, the guidance and procedures given in BS 5228 Parts 1,2 and 4 will be complied with. In the case of vibration, reference will also be made to BS 7385 and BS 6472;
- In addition, specific "quiet hours of working" could be written into all contract binding agreements (i.e. those set out under Section 61 prior consent agreements) to be made between the development partners, Camden Council Officers, the build contractors sub-contractors, suppliers & etc in order to minimise noise and vibration levels on the whole site;
- Design and use of 2.4m high site hoardings and screens/noise barriers, to provide acoustic screening. The hoardings may be moved from time to time to suite the progress of the works;
- Choice of routes and programming for the transport of construction plant and materials should be considered;
- All demolition and construction activities, which have the potential to generate significant amounts of noise and/or vibration, will be undertaken during daytime periods;
- As a general rule, where adjacent neighbouring residents are likely to be affected by noise or vibration, it is expected that works of demolition and construction phase shall be carried out during normal working hours:-

  - 08.00 to 18.00 hours Monday to Friday;

  - 08.00 to 13.00 hours on Saturdays; and

  - no working on Sundays or Bank Holidays

- Where it is necessary for work to be carried out outside normal working hours, they will be required to demonstrate and justify the need to do so in advance. Full details of proposed works shall be submitted to Camden Council in writing for approval prior to commencement;
- Provision of silent vibration free piling techniques should be utilised for driving of steel sheet piles to perimeter of site boundary;
- Loading excavators at ground level will reduce movement vibration by remaining static; tipper lorries with rubber tyres will be loaded from a centralised heap of rubble;
- Travelling on a site road of compacted hardcore will further reduce the vibration of the lorries travelling across the site;
- The utilisation of tipping skips lowered to the ground by a crane will reduce the ground effect vibration;
- Effective silencers will be fitted to the exhaust system of all plant and equipment;
- Use mains generated electricity instead of diesel generators should be considered;
- Minimise the use of vehicle reversing alarms and it is recommended that the build contractor set up a one-way driving system on site;
- Engines will be switched off on-site when not in use, quieter plant will be used and regular plant maintenance will be undertaken;
- Radios and other audio equipment will be prohibited on site;
- The utilisation of a two-way radio communications system will be implemented to reduce the need for shouting;
- Maintenance of equipment noise register will be updated regularly and kept on site;
- Proper instruction and supervision of staff will be provided in order to reduce noise and vibration levels; and
- All operatives, management and etc will wear personal protective equipment (PPE) on site

Air Quality Management

- The utilisation of modern fuel-efficient machines will reduce the emission of exhaust gases into the atmosphere;
- All exhaust systems will be fitted with catalytic converters;
- Plant and equipment will be regularly serviced with air filters which will be regularly replaced or washed; and
- The COSHH survey and report will identify any substances likely to cause offensive odours. A risk assessment will be produced and effective control measures employed to prevent the release of odours accordingly

Surface Ground Controls

- To ensure the immediate area external to the site, including the site entrances and adjacent road/footpath, is free from dust or debris, it will be subject to regular sweeping and washing using a combination of manual and mechanical means;
- Additional care will be taken where there is the potential for surface contamination, for example the refuelling of plant and equipment with diesel and the maintenance of plant and equipment involving the use of engine and hydraulic oils. This would be undertaken within designated areas, away from drainage points and traffic and plant routes;
- All diesel fuel will be stored in double skinned over-capacity bowsers that will be refuelled at designated times by bulk delivery tankers, reducing the total number of traffic movements;
- There will be effective usage of absorbent granules on the ground in key locations; and
- All engine and hydraulic oils will be provided within reusable plastic containers

Visual Intrusion

- At the perimeter of site a hoarding will be erected to reduce the visual impact of the demolition and construction activities at the ground level, as well as to secure the site. The hoarding will be approximately 2.4m high and adequately lit. All plywood hoarding will be painted and maintained in a clean and safe condition by regular cleaning and removal of all graffiti or fly-posters; and
- The building being demolished will be clad with plastic reinforced sheeting to reduce visual impact of the demolition works at high level. All sheeting to be used for buildings will be a grey/off white colour.

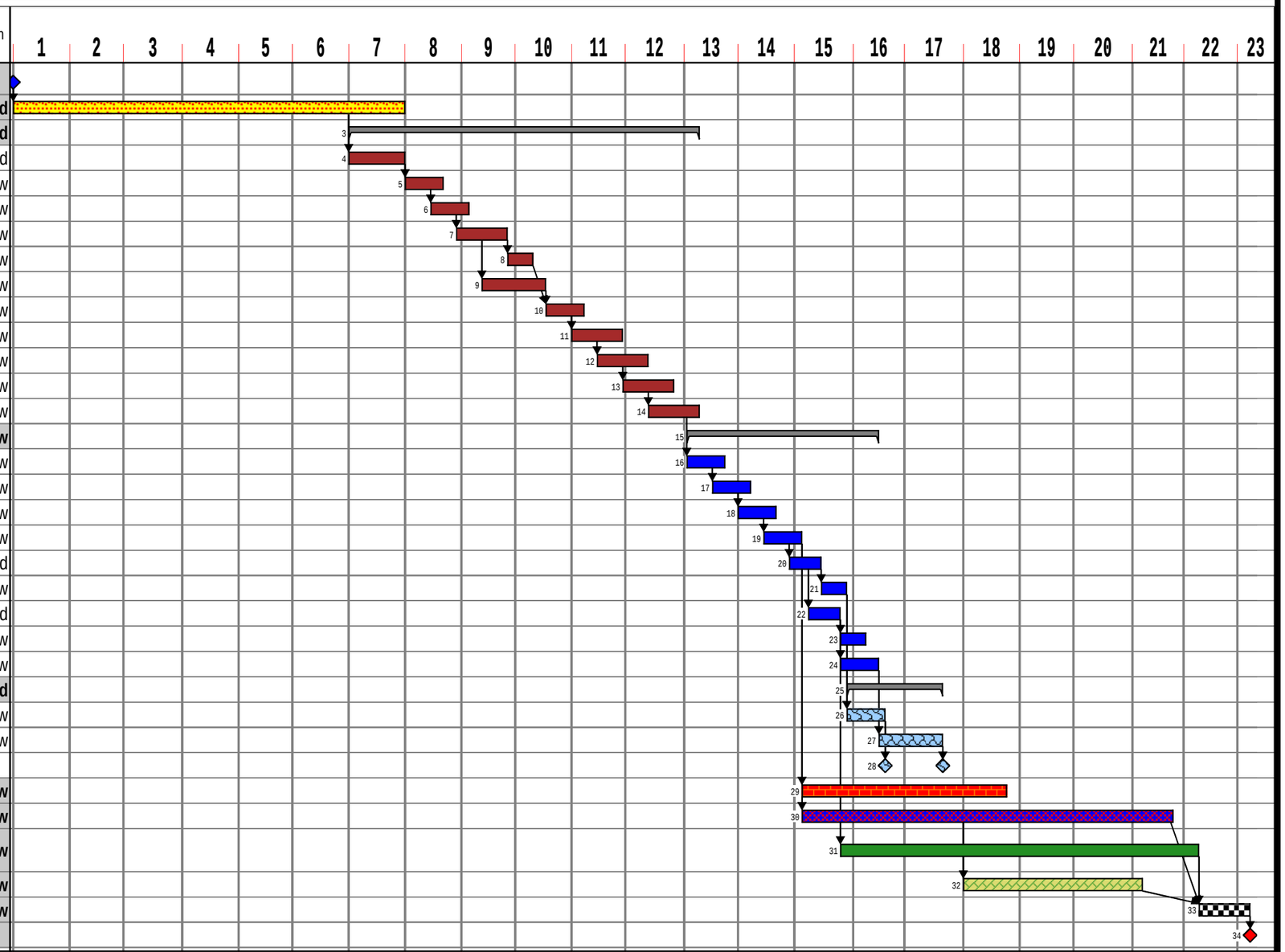
Appendices

Appendix A – Draft Programme

Park Street House

Indicative Draft High Level Master Development Programme - (Months)

Line	Name	Duration
1	**Start on Site**	
2	**Full Perimeter Facade Retention, Strip Out & Demolition**	**30w 3d**
3	**Sub-structure Works**	**27w 2d**
4	Reduce level excavation	4w 2d
5	Place piling mat for piling	3w
6	Construct guide walls	3w
7	Construct Secant piles Assume 305 piles - 2 No. Rigs)	4w
8	Construct load bearing piles (Assume 150 piles - 2No. Rigs)	2w
9	Construct RC capping beam	5w
10	Bulk excavation	3w
11	Construct pile caps, ground beads, lift pit & etc.	4w
12	Sub basement drainage and services	4w
13	Construct raft basement slab	4w
14	Construct Level B1 - Ground Level	4w
15	**Frame-Strcture (Ground - Roof Level)**	**15w**
16	RC frame - Ground	3w
17	RC frame - 1st Floor	3w
18	RC frame - 2nd Floor	3w
19	RC frame - 3rd Floor	3w
20	RC frame - 4th Floor	2w 2.5d
21	Construct roof upstands - 4th Floor	2w
22	RC frame - 5th Floor	2w 2.5d
23	Construct roof upstands - 5th Floor	2w
24	Roof structure & upstands	3w
25	**Roof Finishes**	**7w 2.5d**
26	Terrace roof finishes - 4th & 5th Floor	3w
27	Main Roof finishes	5w
28	Roof watertight dates	
29	**External Envelope & Remedial Works**	**16w**
30	**Building Services**	**29w**
31	**Internal Finishes (Assume 47No. Apartments) - @ 5No. Completions per week**	**28w**
32	**External Works**	**14w**
33	**Overall Testing & Commissioning Works**	**4w**
34	**Project Completion**	



Key

Key Dates | Facade Retention, Strip Out & Demolition | Summary Bars | Sub-Strcture | RC Frame | Roof Finishes

External Envelope | Building Services | Internal Finishes | External Works | Overall Testing & Commissioning | Project Completion

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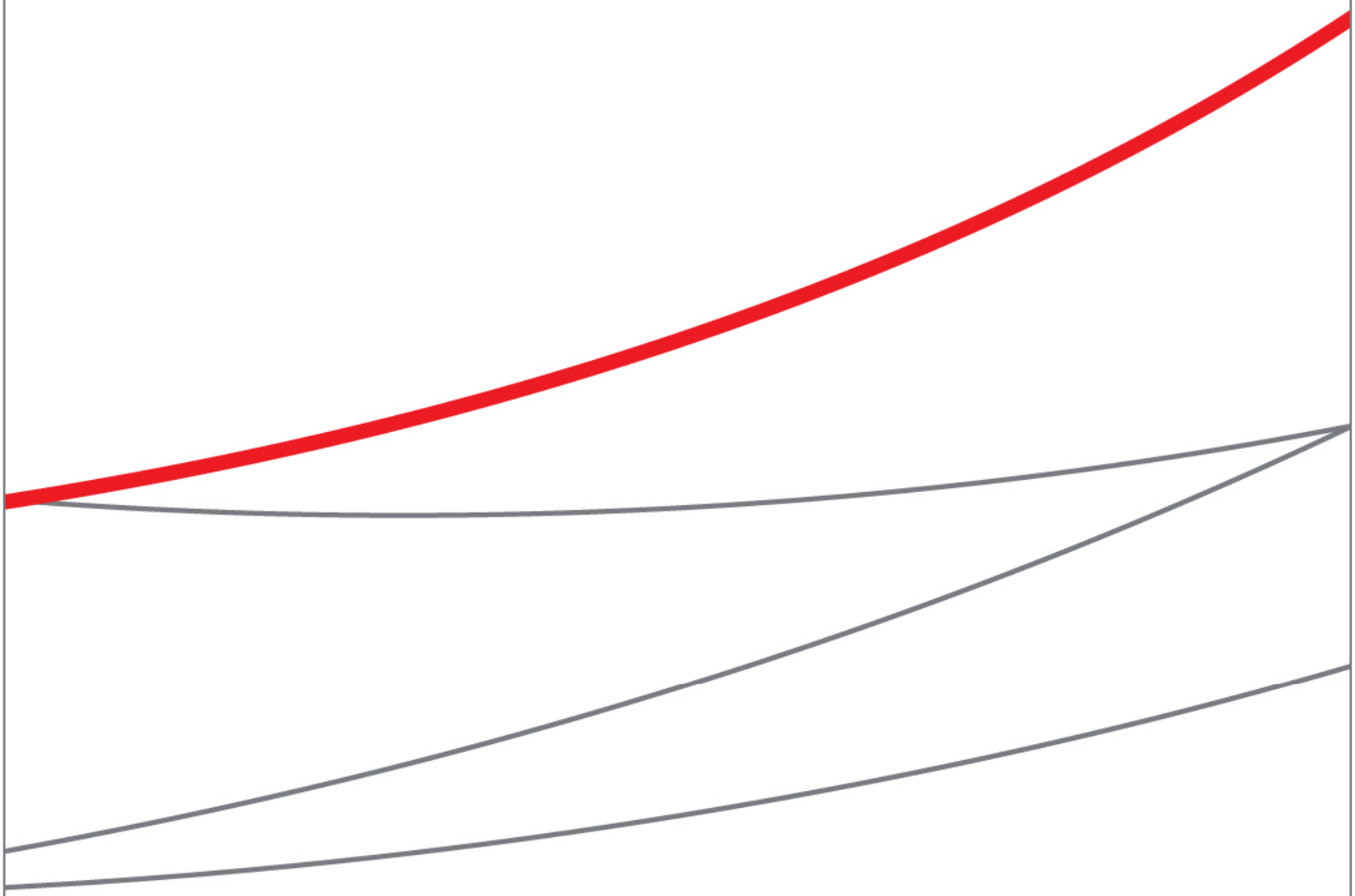

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