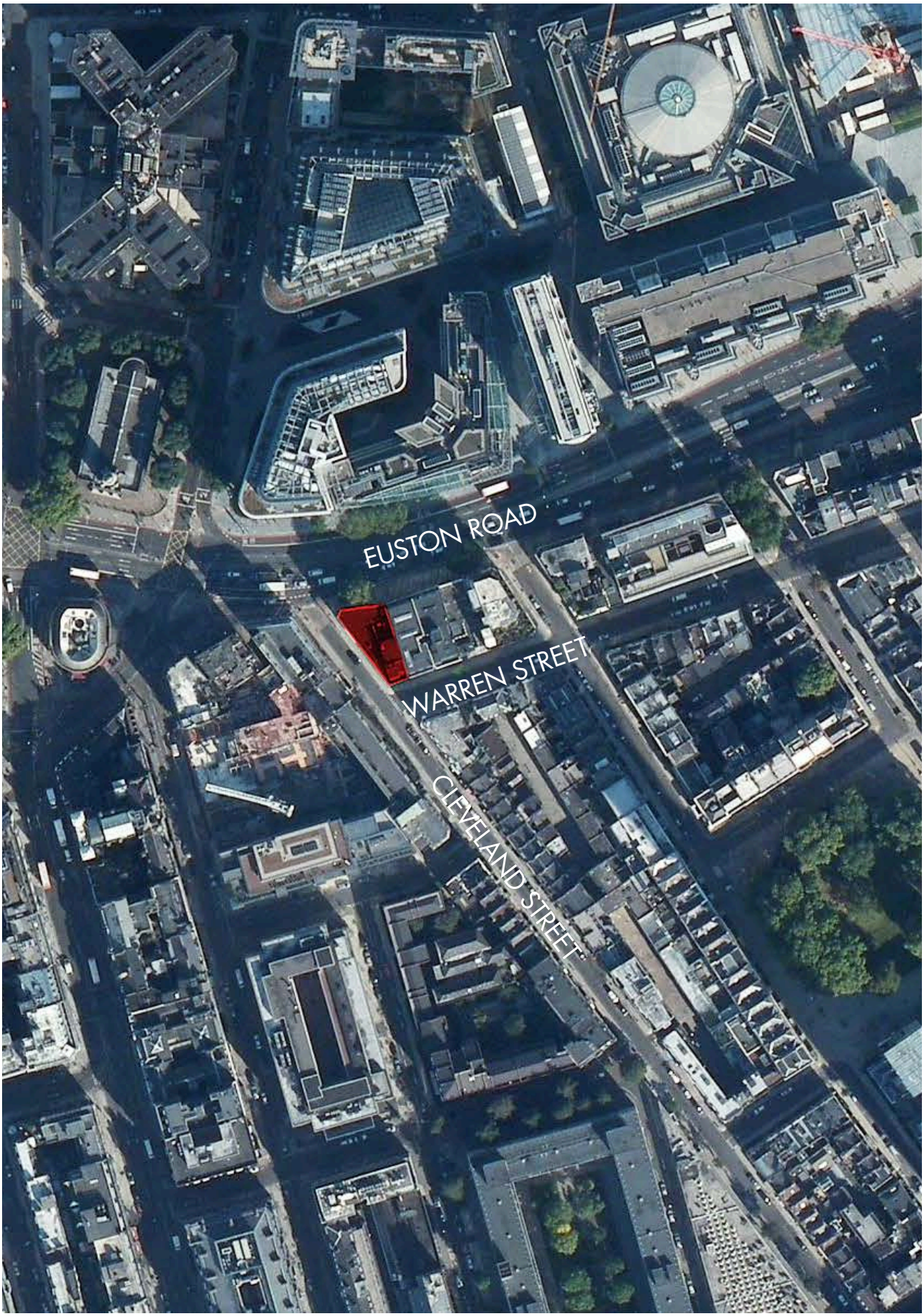
Penoyre & Prasad

Birkbeck, University of London
Cambridge House, 373-375 Euston Road
Construction Management Framework
December 2017


EUSTON ROAD
WARREN STREET
CLEVELAND STREET

Penoyre & Prasad

Contents

1 Introduction

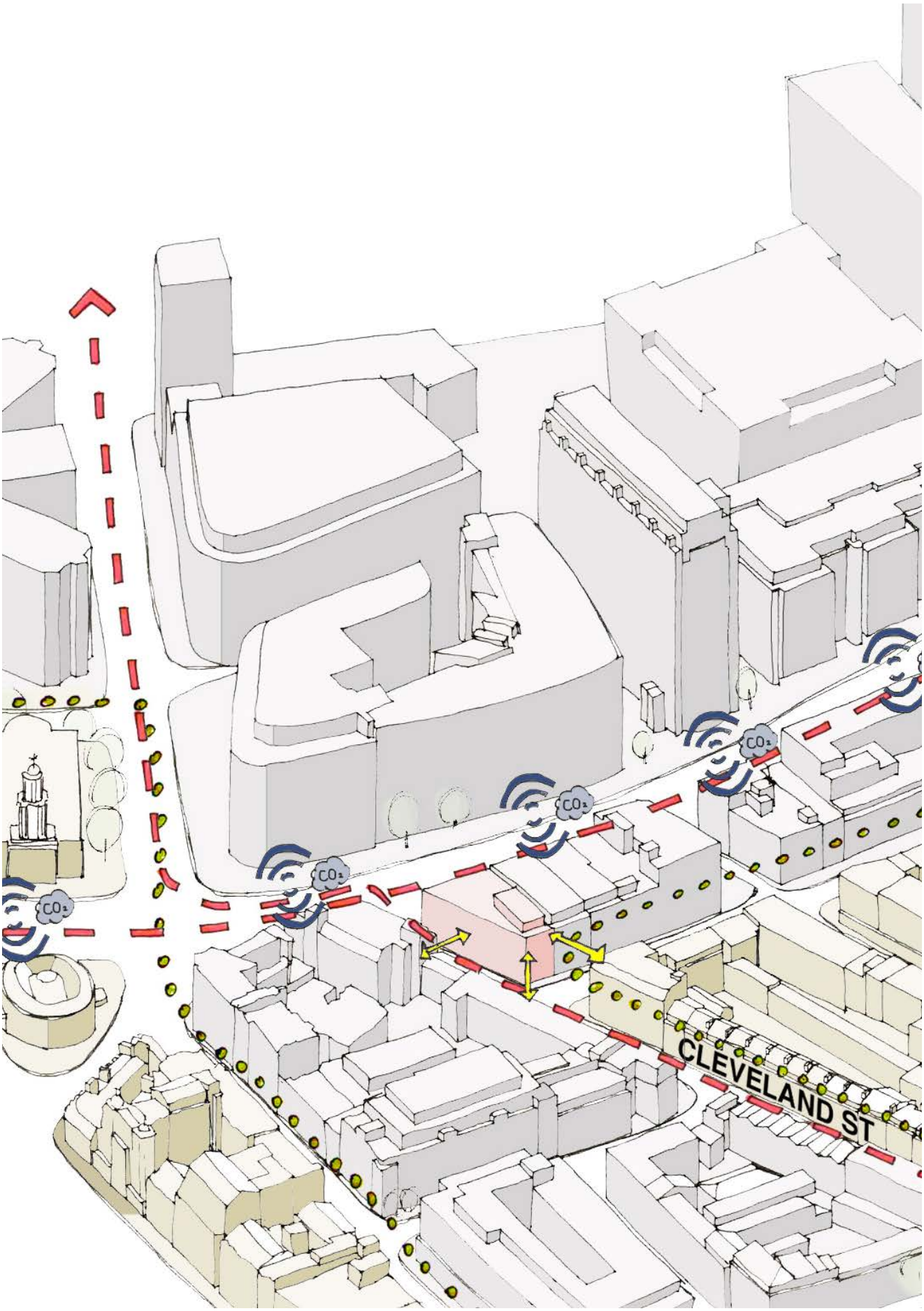
This Construction Management Framework (CMF) has been prepared to support a planning application for the refurbishment and extension of Cambridge House, 373-375 Euston Road for Class D1 Use to accommodate a Teaching Centre for Birkbeck, University of London.

This document sets out the principles of the proposed demolition and construction activities to be under taken. It outlines how the development will minimise the impact of these activities on the local infrastructure during the demolition and construction works and outlines mitigation measures.

In the absence of a Main Contractor, the Construction Management Plan has been prepared on behalf of the applicant by their professional team and is based on typical construction methods that can be reasonably anticipated for a development of this type.

This report is indicative and will be subject to modification as the design develops and contractors are procured. Once a Main Contractor has been appointed the Construction Management Plan will be revised and formally submitted for approval to Camden Council before any works start on site.

It is anticipated that construction on site would commence in November 2018 and that the period of construction will be approximately one year.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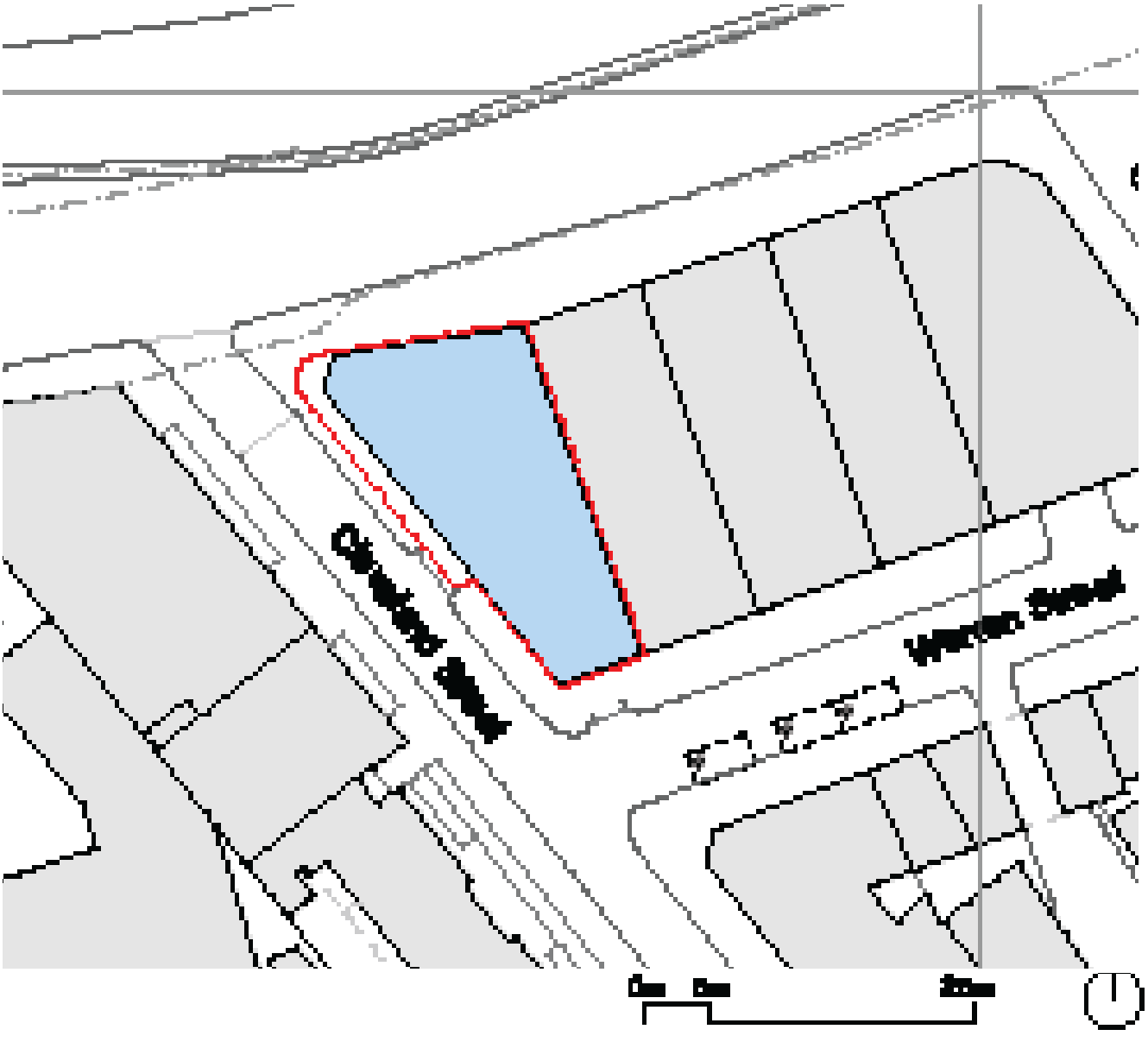
2 Site Location

The site is located at Cambridge House, 373-375 Euston Road. The site sits on the end of the terrace bounded by Euston Road to the north, Cleveland Street to the West and Warren Street to the South. The existing building directly adjoins number 369 Euston Road.

The site sits diagonally opposite Holy Trinity Church and overlooks the busy junction of Euston Road and Marylebone Road. The surrounding properties on Euston Road, including the adjoining property, are largely used for commercial purposes. There are residential properties on Warren Street and Cleveland Street, as highlighted in the drawing below.

The boundary of the application site follows the building line to Warren Street, stepping out to pick up the pavement lights along Cleveland Street.

The site has good regional and local road access via a network of A-roads and B roads, providing good connection within central London and with a wider area via the national transport network. The local highway network layout is outlined in more detail in the Transport Statement submitted as part of this application.



3 Development

The proposal looks to refurbish the existing building to provide 1407sqm Gross Internal Area (GIA), with a two storey extension at existing roof level providing a further 440sqm. The works will provide a total GIA of 1850sqm for the Birkbeck, University of London Teaching School.

The following works and activities will be required:

- detailed asbestos survey and subsequent minor demolitions and removal
- condition survey of adjacent buildings.
- service infrastructure works
- site clearance and enabling works
- demolition works
- sub structure and basement excavation works
- works to the existing building facade
- construction of extension superstructure
- external envelope and building fit out
- external works to pavement lights

The main challenges associated with redeveloping this site are:

- traffic management and road closures
- high level of vehicular traffic in the surrounding area.
- high level of pedestrian traffic
- limited access to the east of the site over the existing adjoining property
- close proximity to neighbouring properties, including residential properties.
- location of site facilities within a small site boundary
- storage of materials and waste
- control of noise and dust.
- load limitations during construction due to existing structure limitations
- location of cranes and hoists

Construction Sequence

An indicative construction sequence for this specific project is outlined below. Details may change subject to the detailed design development. An indicative construction sequence for the sub structure is outlined below and should be read in conjunction with Webb Yates Sketch J2740-S-SK-0048 and 0049 (refer to appendices).

Enabling Works

- Secure site and set up contractor welfare and site accommodation;
- Ensure all incoming services have been isolated.
- Relocate or divert any remaining services;
- Monitoring according to detailed monitoring scheme agreed with London Underground. Construction programme and method statements are to be agreed by the contractor with London Underground prior to construction.

Demolition of Superstructure Elements

- Installation of temporary works and temporary propping to allow for demolition of existing stair cores and strengthening of existing structures according to demolition plan and structural scheme. Temporary works to support vertical loads and to secure overall stability of the building.
- Demolition of existing cores according to demolition plans; Remove existing stairs and all internal walls to all levels, with the exception of the existing lift core and rear stair core. Rear stair core is retained at basement and ground floor. Re-support existing floors from new structural steel framing where load bearing walls have been removed.
- Local demolition of timber joist floors according to demolition plans.

Substructure

- The scheme includes removal of the existing floor slab and installation of new ground bearing slab at basement level. New foundations and strengthening of existing foundations. Details may change subject to the detailed design development.
- Water table to be monitored prior to and during construction.
- Demolition of existing basement slab in hit and miss sequence. Temporary propping to basement retaining wall if required subject to detailed construction method. Demolition of existing basement slab to be carried out by vibration free methods such as saw-cutting the existing slab into manageable pieces for removal.
- Underpin party wall locally with mass concrete underpins in hit- and miss sequence to allow for excavation for lift pits. Temporary works to prop mass concrete underpins until lift pits have been constructed.
- Fix rebar, shutter and pour new reinforced lift pits in reinforced concrete.
- Excavate for new slab and foundation works.
- Fix rebar, shutter and pour new reinforced concrete foundations and reinforced strengthening of existing foundations, ground bearing capacity to be confirmed as specified.
- Excavate, lay and test underground drainage, coordinate and install incoming services to plot, backfill including concrete surround and drainage suspension system;
- Fix rebar, shutter and pour ground-bearing basement slab formation including concrete blinding, and waterproofing system; Slab to be installed in sequence. Installation of drained cavity system to basement to improve waterproofing;
- Strengthening of existing coal holes/vaults beneath Cleveland Street. This may take the form of structural steel arch support. The coal holes / vaults may be located outside of the site boundary and any works are likely to need agreement with the land owner;

Within the existing building, ground settlements have been assessed based on the additional loading from the extension where the foundation areas will be extended to allow for support of the additional loads from the extension. An assessment of an increase/ decrease in loading on existing foundations has been carried out.

The outlined construction sequence by Webb Yates is to be adopted and detailed by the contractor to limit ground movements during construction and to ensure the existing structure. A carefully considered and coordinated temporary support system and construction sequence is to be adopted by the contractor to minimise movements during construction and limit the risk of damage to adjacent structures including the existing building and London Underground assets.

During critical construction phases the contractor is to monitor surrounding buildings, London Underground assets and the existing building to ensure no unexpected movements occur. A detailed monitoring scheme is to be agreed with London Underground and the monitoring works may include monitoring prior to, during and following construction and could be formed by monitoring of the buildings, London Underground assets or both. This should take the form of regular readings being taken and visual inspections being done during times of transfer of load from one system to another, such as removal of existing structure (transfer of load to temporary works) and removal of temporary propping (transfer to permanent works).

The lateral stability system of the existing building will change as some existing cores are being removed and new cores are being constructed and therefore this will be affected by its demolition.

The contractor is to propose his intended monitoring scheme for approval prior to commencement of works. This is also to be approved by London Underground, and the contractor must allow sufficient time for approval which is anticipated to take 8 weeks for response.

Superstructure Existing Building

- Removal of existing car lift and infill floor with new timber structure and new structural steel beam at ground floor level. Area of supposed car lift is to be confirmed through survey after asbestos removal due to current asbestos risk in the car-lift area;
- Removal of structure to form a large lightwell/staircase into the basement against the Euston road elevation. - Strengthening of existing masonry piers where ground floor is removed to form lightwell/staircase.
- Addition of new lift cores and staircases through all levels
- Access hatch and supporting structures to be installed in ground floor;
- Tying of facade into floor plate using restraint straps to masonry façade;
- Strengthening of floors locally to accommodate any high load elements such as access areas by lift and stair cores;
- Strengthening of walls with steel posts to transfer loads of new stories from above
- Construct new reinforced concrete core structure, or alternatively utilise CLT core structure for new cores. Stair cores to incorporate new precast concrete stairs/ steel stairs.
- Strengthen existing perimeter piers between basement level and proposed Level 04 by installation of structural steel columns chased into existing brick piers.
- Capacity of existing internal steel columns up through the building is to be confirmed where additional load from extension is applied.
- Steel angles fixing existing steel beams into masonry piers where steel columns are chased into brick pier to support existing steel beams and roof extension;
New lifting beam at first floor level above access hatch to basement level;
- Removal of existing roof structure, temporary propping to be in place to prop the existing structure during demolition and construction of new 4th floor steel roof grillage designed to tie the top of the brickwork walls and transfer loads from the new structure above.
- Install new structural continuous steel perimeter beam to the perimeter of Level 04 to provide transfer structure and for disproportionate collapse;
- Stairs will be installed as early as possible to provide operative vertical access.

Additional Stories

It is proposed that the new lecture theatre and plant rooms are formed using cross laminated timber (CLT) and glulam beams combined with supporting steel transfer structure. CLT floors and roof plate to act as diaphragm. Floor and roof diaphragms installed sequentially to establish lateral stiffness of structure. Temporary propping and diagonal bracing to be pro vided as required. Method statement for installation of the CLT structure by the contractor and manufacturer.

Fit out and Finishes

- Install envelope cladding system.
- Roof waterproofing system will be installed as soon as the roof structure has been installed to achieve the earliest watertight date.

Services

The works will require disconnection of existing utility services and reinstatement/upgrade as appropriate.

Discussions have been held with the following utilities:

- UKPN - For disconnection of the existing multiple LV supplies to the building prior to the works and provision of a single LV supply in the basement (north end) for the redeveloped building.

- Fulcrum - For disconnection of the existing gas supply to the building and upgrade with a new supply in the basement (south end) for the redeveloped building

- 1-Gas – For the same gas works as above

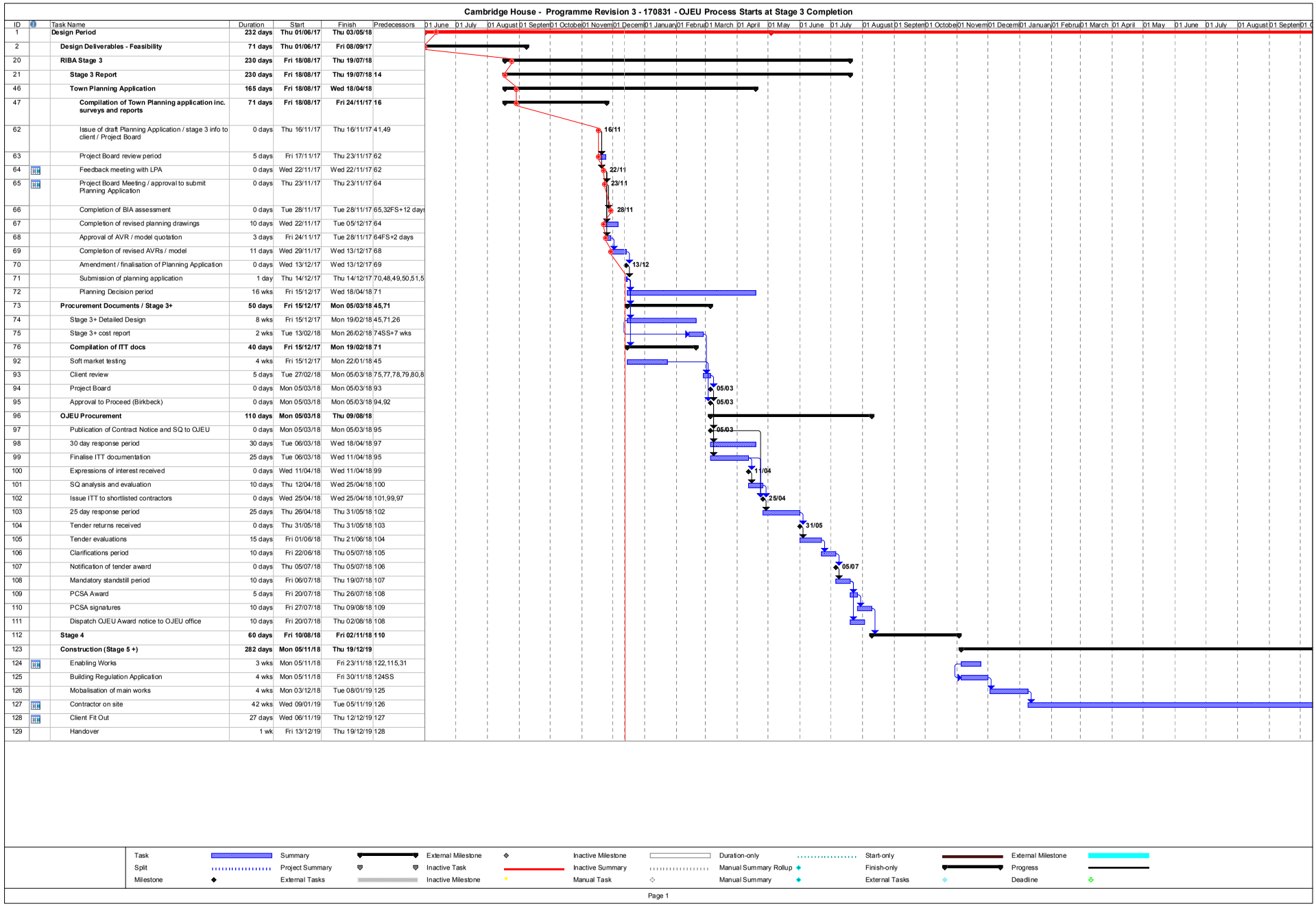
- Squire – For the same gas works as above

- Thames Water – For the disconnection of the existing water supply to the building (in the basement south end) and reinstatement of the same supply following completion of the works.

A CCTV survey has been carried out, showing that the existing drainage connects to a combined sewer at Cleveland Street at by the south west corner of the building. The existing connection is proposed to be used to connect the drainage to the main sewer.

There also existing BT assets in the building and arrangements will be made with them for disconnection. New fibre leased lines are planned for the redeveloped building entering at both the north and south ends in the basement.

Although there are existing utility supplies to the building, disconnection and upgrade works may require works in the adjacent pavements and possibly highways. Opportunities will be sought to combine excavation and traffic management works where possible. Discussions and proposals will be developed further once a main contractor is appointed.


Cambridge House - Programme Revision 3 - 170831 - OJEU Process Starts at Stage 3 Completion
ID
Task Name
Duration
Start
Finish
Predecessors
1 Design Period 232 days Thu 01/06/17 Thu 03/05/18
2 Design Deliverables - Feasibility 71 days Thu 01/06/17 Fri 08/09/17
20 RIBA Stage 3 230 days Fri 18/08/17 Thu 19/07/18
21 Stage 3 Report 230 days Fri 18/08/17 Thu 19/07/18 14
46 Town Planning Application 165 days Fri 18/08/17 Wed 18/04/18
47 Compilation of Town Planning application inc. surveys and reports 71 days Fri 18/08/17 Fri 24/11/17 16
62 Issue of draft Planning Application / stage 3 info to client / Project Board 0 days Thu 16/11/17 Thu 16/11/17 41,49
63 Project Board review period 5 days Fri 17/11/17 Thu 23/11/17 62
64 Feedback meeting with LPA 0 days Wed 22/11/17 Wed 22/11/17 62
65 Project Board Meeting / approval to submit Planning Application 0 days Thu 23/11/17 Thu 23/11/17 64
66 Completion of BIA assessment 0 days Tue 28/11/17 Tue 28/11/17 65,32FS+12 days
67 Completion of revised planning drawings 10 days Wed 22/11/17 Tue 05/12/17 64
68 Approval of AVR / model quotation 3 days Fri 24/11/17 Tue 28/11/17 64FS+2 days
69 Completion of revised AVRs / model 11 days Wed 29/11/17 Wed 13/12/17 68
70 Amendment / finalisation of Planning Application 0 days Wed 13/12/17 Wed 13/12/17 69
71 Submission of planning application 1 day Thu 14/12/17 Thu 14/12/17 70,48,49,50,51,5
72 Planning Decision period 16 wks Fri 15/12/17 Wed 18/04/18 71
73 Procurement Documents / Stage 3+ 50 days Fri 15/12/17 Mon 05/03/18 45,71
74 Stage 3+ Detailed Design 8 wks Fri 15/12/17 Mon 19/02/18 45,71,26
75 Stage 3+ cost report 2 wks Tue 13/02/18 Mon 26/02/18 74SS+7 wks
76 Compilation of ITT docs 40 days Fri 15/12/17 Mon 19/02/18 71
92 Soft market testing 4 wks Fri 15/12/17 Mon 22/01/18 45
93 Client review 5 days Tue 27/02/18 Mon 05/03/18 75,77,78,79,80,8
94 Project Board 0 days Mon 05/03/18 Mon 05/03/18 93
95 Approval to Proceed (Birkbeck) 0 days Mon 05/03/18 Mon 05/03/18 94,92
96 OJEU Procurement 110 days Mon 05/03/18 Thu 09/08/18
97 Publication of Contract Notice and SQ to OJEU 0 days Mon 05/03/18 Mon 05/03/18 95
98 30 day response period 30 days Tue 06/03/18 Wed 18/04/18 97
99 Finalise ITT documentation 25 days Tue 06/03/18 Wed 11/04/18 95
100 Expressions of interest received 0 days Wed 11/04/18 Wed 11/04/18 99
101 SQ analysis and evaluation 10 days Thu 12/04/18 Wed 25/04/18 100
102 Issue ITT to shortlisted contractors 0 days Wed 25/04/18 Wed 25/04/18 101,99,97
103 25 day response period 25 days Thu 26/04/18 Thu 31/05/18 102
104 Tender returns received 0 days Thu 31/05/18 Thu 31/05/18 103
105 Tender evaluations 15 days Fri 01/06/18 Thu 21/06/18 104
106 Clarifications period 10 days Fri 22/06/18 Thu 05/07/18 105
107 Notification of tender award 0 days Thu 05/07/18 Thu 05/07/18 106
108 Mandatory standstill period 10 days Fri 06/07/18 Thu 19/07/18 107
109 PCSA Award 5 days Fri 20/07/18 Thu 26/07/18 108
110 PCSA signatures 10 days Fri 27/07/18 Thu 09/08/18 109
111 Dispatch OJEU Award notice to OJEU office 10 days Fri 20/07/18 Thu 02/08/18 108
112 Stage 4 60 days Fri 10/08/18 Fri 02/11/18 110
123 Construction (Stage 5 +) 282 days Mon 05/11/18 Thu 19/12/19
124 Enabling Works 3 wks Mon 05/11/18 Fri 23/11/18 122,115,31
125 Building Regulation Application 4 wks Mon 05/11/18 Fri 30/11/18 124SS
126 Mobalisation of main works 4 wks Mon 03/12/18 Tue 08/01/19 125
127 Contractor on site 42 wks Wed 09/01/19 Tue 05/11/19 126
128 Client Fit Out 27 days Wed 06/11/19 Thu 12/12/19 127
129 Handover 1 wk Fri 13/12/19 Thu 19/12/19 128
01 June 01 July 01 August 01 Septem 01 October 01 Novem 01 Decem 01 January 01 Februa 01 March 01 April 01 May 01 June 01 July 01 August 01 Septem 01 October 01 Novem 01 Decem 01 January 01 Februa 01 March 01 April 01 May 01 June 01 July 01 August 01 Septem
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Task
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Milestone
Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Progress
Deadline
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4 Programme & Phasing

An indicative programme as prepared by the applicants Project Manager, MACE, has been included opposite. The programme is subject to change once a Main Contractor is appointed.

It is anticipated that the works will be undertaken in three phases, with the removal of asbestos being carried out prior to commencement of the main contract. The dates below are dependent upon the completion of legal and planning agreements. The following indicative time scales and activities are anticipated:

Phase 1 Enabling Works
- works to commence in August 2018 and last approximately four weeks.

Phase 2 Demolitions
- demolition works will commence in September 2018

Phase 3 Construction
- main building works will start in November 2018 and continue until October 2019.

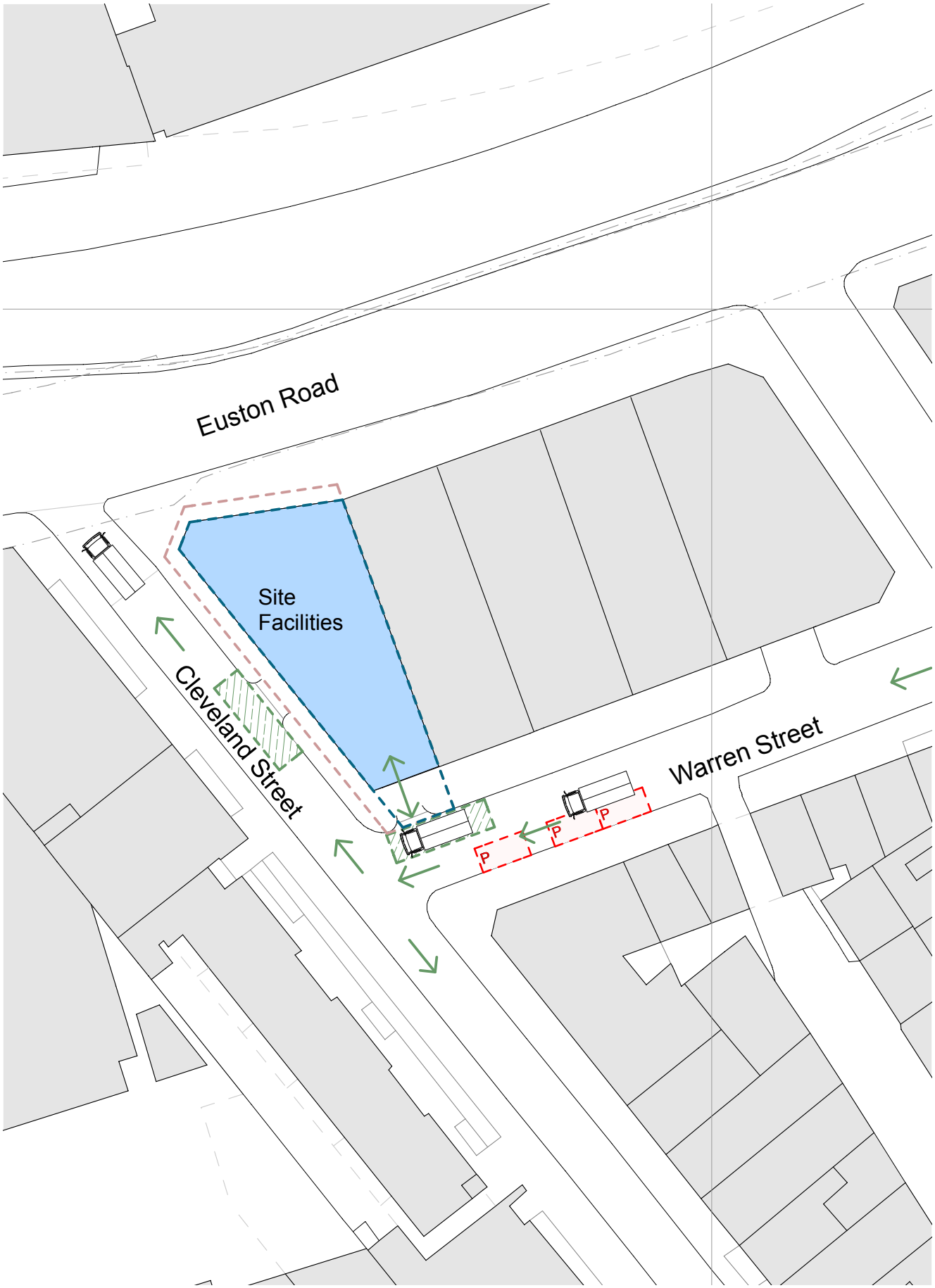
The programme allows for standard working hours for the site as follows. No routine operations would be undertaken outside the agreed working hours.

- 8.00am to 6pm on Monday to Friday
- 8.00am to 1.00pm on Saturdays
- No working on Sundays or Public Holidays

5 Community Liason

The main contractor will undertake a programme of community engagement. Considerate contractors.

It is anticipated that a quarterly newsletter will be prepared by the building contractor that will be delivered to all neighbouring residents and businesses in the surrounding area providing an update on building activates on site and providing a direct contact number should they have any requirement to contact the contractor.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Warren Street
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6 Construction Logistics and Traffic Management Plan

Set out below are the general principles of the site logistics and traffic management. These will be developed in greater detail by the main contractor through consultation with Camden Council and developed alongside the neighbourhood consultation process in line with Camdens requirements.

Traffic Routes

Prior to commencement on site, a full Construction Management Plan will be developed by the appointed contractor. This will clearly identify the proposed routes, banksmen and signage requirements. The main contractor will be responsible for implementation of the logistics plan. We would anticipate that a site logistics manager would be appointed to plan and manage interfaces. The key principles are outlined below.

Euston Road is a two-way carriageway with three lanes in each direction. There are a number of one-way roads within the area to the south of Euston Road. Warren Street operates one-way westbound, and Cleveland Street operates one-way northbound and one-way southbound of the junction with Warren Street. Where Cleveland Street meets Euston Road, right turning movements are prohibited.

TfL will not approve any disruption to Euston Road; therefore all construction traffic will need to rely on access from Cleveland Street and Warren Street, to service the site.

Arrivals to the site from the north will arrive via Euston Road and Warren Street. Arrivals from the east will arrive via Conway Street and Warren Street. Arrivals from the south will arrive via Tottenham Court Road and Warren Street. Arrivals from the west will arrive via Euston Road and Warren Street. All departures from the site will be via Cleveland Way and Euston Road.

It is not deemed that wheel washing facilities will be necessary as vehicles will not be entering the site.

Vehicle Loading

Due to the constraints of the site, it is likely that loading and servicing will have to be undertaken on street. Currently, vehicle access to the site is available via a dropped kerb vehicle crossover on Warren Street. Additionally, a dropped kerb vehicle crossover on the Cleveland Street frontage provides vehicle access to the west facade of the ground floor.

Considering the limited carriageway width on Cleveland Street immediately adjacent to the site, a suitable location for loading and servicing is along the northern kerbline of Warren Street at the corner with Cleveland Street, within which skip set down and collection would be possible. Appropriate arrangements will be put in place regarding hoardings, footway access and parking suspensions. Fire tender access to Warren Mews is required to be maintained.

All deliveries will be planned and booked in advance, preventing unannounced or unplanned arrivals. Due to the constrained site, a suitable holding area away from the site will have to be agreed with Camdens highways department. For the superstructure and finishing operations deliveries will be made using small delivery vehicles where possible.

Construction Traffic

The level of construction traffic that will be generated by the scheme is anticipated to be relatively minor. It is not anticipated that any vehicles will enter the site. Vehicles will be located on street with necessary arrangements in place.

Excavation works to the basement can be carried out from Warren street, allowing the contractor to ensure that all land waste disposal lorries are loaded from the more accessible side of the site. Storage on site is limited, so the contractor would carefully manage the arrival of vehicles and removal of material.

A mobile tower crane will be used for the construction of the extension with loading areas established on each floor. The location of the mobile crane and any requirement for road closures will be agreed once the main contractor is appointed.

Highways Interventions

The location of the loading and servicing bay on Warren Street requires suspension of the on-street parking bays on the opposite kerbline for the duration of construction. The three bays include a disabled bay, electric vehicle bay, and a pay and display. The disabled bay (and potentially the electric vehicle bay) would be relocated to a suitable location which still provides appropriate access.

Access to the footway immediately adjacent to the servicing and loading would be maintained with construction hoarding proposed up to the limit of the site boundary and an oversailing of the footway to maximise construction space above ground level.

The contractor will manage safe passage of pedestrians, cyclists and traffic when vehicles are being loaded or unloaded. Parking bay suspensions will be required to Warren Street.

A solid, well maintained hoarding line will separate the general public from the works and all gates will be maintained by security officers during working hours. Signage will be installed to show clear and safe access routes around the site.

It is anticipated that the existing building line will be used as a hoarding line to Euston Road and Cleveland Street.

It is likely that hoarding will need to be temporarily increased to carry out the works to the existing ground floor facade and highways works. The hoarding line will be as close is a practically possible to the existing building to minimise the impact on the surrounding footpaths.

Hoarding and scaffold licenses will be required over the surrounding pavements for the duration of the construction and will be agreed with Camden Council.

Site Waste Management

The disposal of waste generated during construction, will be managed to maximise the environmental and development benefits. Principles of waste management which favour re-use of materials and recycling over disposal to landfill will be favoured.

Once a main contractor has been appointed, methods for waste reduction will form a basic strategy for the construction waste management plan.

The main contractor will ensure waste arising on site will be reused where possible, either directly or by recycling, using waste monitoring and setting of targets. Where possible, recyclable materials such will be put in colour-coded bins, ready for collection by the appropriate contractor. Waste that cannot be reused will be removed by Environment agency licensed carriers to suitable licensed disposal sites.

7 Environmental Issues

Construction and demolition works will be carried out in such a way as to limit as far as possible adverse environmental impacts and will be carried out in accordance with the general provisions listed in the following:

- planning approvals from Camden Council
- requirements from highways authority
- Considerate Constructors Scheme

The main contractor will develop detailed health and safety plans, fire, accident and environmental procedures to suit the construction sequence of the development. The activities will include, but not limited to the activities and mitigations measures outlined in the following sections.

Noise and Vibrations

Activities on site that are likely to produce the most noise are demolition and excavations. There will be a requirement to carry out concreting activities, however these are not considered to be significant.

Details of activities and anticipated noise levels will be discussed with Camden Council and stakeholders through community liaison prior to construction. Evaluation and assessment of noise levels will be an ongoing activity throughout construction. It is anticipated that noise monitoring will take place at site boundary points. The potential receptors for noise are identified in section 2, and will be the residential properties to the south side of Warren Street and Cleveland Street, and the adjoining commercial property at 369 Euston Road.

Where the potential for noise exists, good practice will be employed to manage noise, in accordance with the recommendations of BS 5228. These include, but are not limited to the following:

- operatives should be trained to employ appropriate techniques to keep site noise to a minimum, and should be supervised to ensure that best working practice is followed
- excessive noise should be prevented through careful consideration of the processes, activities and programme of the construction works
- the selection of routes and delivery schedules for the transportation of construction materials should minimise noise
- noise will be controlled at source where possible.
- site plant and equipment will be kept in good repair and maintained in accordance with manufacturers recommendations
- plant and vehicles will not be left running - movement of plant / noisy activities should be within the hours of operation will be agreed with Camden Council
- site hoarding /noise barriers will be installed around major plant items as appropriate

A degree of vibration is anticipated due to the nature of construction works being undertaken. This nuisance will be carefully monitored and controlled, if it cannot be eliminated in the first instance. TFL have specifically highlighted demolition of the basement slab and vibrations occurring from this. The demolition works therefore will be carried out by a vibration free method. We have proposed saw cutting of the slab into manageable pieces that can then be removed.

Dust Emissions

Measures to reduce dust would be controlled through careful project planning and site management and would include the following:

- burning on site of materials will be prohibited
- provision of water sprays and appropriate screening, particularly during demolition works.
- use of dust screens and covers during transportation of dusty materials, with particular reference to stockpiles of earth from basement excavation
- an appointed person will oversee activities and handle complaints
- significant dirt or dust spread onto the public highway will be prevented through the provision of a designated loading and unloading area.
- regularly cleaning of the site entrance loading area, including the public highway will be undertaken regularly.

A Risk Assessment relating to control of dust will be undertaken prior to start on site. in line with the GLA's Control of Dust and Emissions Supplementary Planning Guidance (SPG).

Pest Control

A specialist contractor will be appointed to carry out a site inspection and remove rodents if they are found on site.

Asbestos Surveys

Asbestos surveys have been carried out and made available to the Main Contractor once appointed. The asbestos removal will be carried out prior to the commencement of the main contract.

Work Force

Site accommodation and welfare facilities will be located within the existing building, until such a point as works to those areas will be undertaken. At which point, alternative local accommodation will be found.

All contractors will be required to adopt the Construction Skills Certification Scheme (CSCS) or equivalent.

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