

Chapter 5: Demolition and Construction

INTRODUCTION

- 5.1 This ES Chapter of the Environmental Statement (ES) describes the proposed programme of the demolition and construction works and the key activities that will be undertaken prior to the completion and occupation of the Proposed Development (references to the Proposed Development throughout this ES Chapter unless specified otherwise refers to the 'revised' October 2021 scheme).
- 5.2 Planning for construction is necessarily broad at this stage and will be subject to modification during the detailed construction planning which does not start until a contractor has been appointed. For this reason, the following information is based on reasonable assumptions based on the construction programme and collective experience of the Design and Consultant Team on similar projects.
- 5.3 Potential environmental effects identified within this ES Chapter are discussed in more detail in each of the corresponding technical ES Chapters of this **ES (Volume 1 and Volume 2)**.
- 5.4 Based on the revised scheme proposals, the main changes to this October 2021 ES Chapter (in comparison to the 2018 ES Chapter) are the demolition and construction programme, the site access arrangements, wider traffic routes, estimated construction vehicle movements and estimated opening year of the Proposed Development.
- 5.5 As discussed in **ES Chapter 2 – EIA Methodology (Volume 1)**, the construction materials and construction waste quantities, as well as the construction vehicle numbers presented within this ES Chapter have been based on the December 2020 scheme which assumed that 13,868m² GEA of floorspace of the Main Building would comprise D1 medical use (similar to the use class breakdown under Option 1 for the Proposed Development). The Proposed Development is considered to result in no more than a 5% reduction in construction materials and waste quantities and therefore represents a worst-case assessment with regards to construction vehicle numbers. In addition to this, it has been assumed that both Option 1 and Option 2 would not materially differ with regards to construction materials and waste and resultant construction vehicle movements. As such, the information provided in this ES Chapter applies to both use class options unless stated otherwise.

PROGRAMME OF WORKS

- 5.6 In terms of timescales, the current expectation is that works on-site will take approximately 36 months, commencing in Q4 2022 with removal of the temporary market / food and beverage use on site, site establishment and any necessary surveys and investigations.
- 5.7 Whilst all details regarding future construction have not been finalised at this stage, it is possible to provide general information about the key construction activities. The works programme is expected to be continuous, with no phased occupation of completed elements of the scheme whilst construction is ongoing elsewhere on-site.
- 5.8 The anticipated programme is presented in **Figure 5.1** and summarised in **Table 5.1**.
- 5.9 An indicative phasing and logistics plan, figuratively showing the proposed stages of the construction works, is presented in **Figure 5.2**.

Figure 5.1 Indicative Demolition and Construction Programme

| Construction Task / Activity | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|------------------------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|--------|----|----|----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Site Establishment | | | | | | | | | | | | | | | | |
| Demolition | | | | | | | | | | | | | | | | |
| Substructure | | | | | | | | | | | | | | | | |
| Superstructure | | | | | | | | | | | | | | | | |
| Envelope | | | | | | | | | | | | | | | | |
| Fit-Out (Shell and Core) | | | | | | | | | | | | | | | | |
| Landscaping & Public Realm | | | | | | | | | | | | | | | | |
| Works to Existing Warehouse | | | | | | | | | | | | | | | | |

Table 5.1 Indicative Demolition and Construction Programme

| Construction Task / Activity | Duration | Start Date (Quarter and Year) | Completion (Quarter and Year) |
|------------------------------|----------|-------------------------------|-------------------------------|
| Site Establishment | 4 weeks | Q4 2022 | Q4 2022 |
| Demolition | 6 weeks | Q4 2022 | Q4 2022 |
| Substructure | 48 weeks | Q4 2022 | Q3 2023 |
| Superstructure | 52 weeks | Q3 2023 | Q2 2024 |
| Envelope | 52 weeks | Q1 2024 | Q4 2024 |
| Fit-Out (Shell and Core) | 78 weeks | Q2 2024 | Q3 2025 |
| Landscaping & Public Realm | 36 weeks | Q1 2025 | Q3 2025 |
| Works to Existing Warehouse | 78 weeks | Q2 2024 | Q3 2025 |

DESCRIPTION OF WORKS

Current Condition of the Site

- 5.10 The site is currently being used for a temporary market / food and beverage use (see further discussion within **ES Chapter 1 – Introduction (Volume 1)**). With the exception of the existing warehouse the remaining buildings / temporary structures on site will be demolished and / or removed and are described further within the description of works (see 'Demolition' section) below.

Site Establishment and Enabling Works

Pre-Commencement Surveys, Investigations, Consents / Licenses

- 5.11 A number of surveys and investigations would be undertaken prior to the commencement of works on-site. In addition, various consents and licences would need to be granted. An indicative list of pre-commencement surveys and investigations, as well as necessary consents and licences required to commence an onsite activity (to be obtained ahead of the works commencing and giving the appropriate notice period) that are envisaged are presented below (including, but not all listed):

- Condition survey of any adjoining party walls and boundary walls;
- Structural surveys of existing buildings;
- Asbestos survey of existing buildings;
- Topographical survey to confirm existing site levels;
- Utility surveys to determine the position of any assets;
- CCTV survey of the surface water and foul water drainage to confirm size and condition;
- Permission for connections to existing statutory services and main sewers;
- Licences for discharge of water from the site into the public sewer, if required;
- Party Wall Act notices and agreements; and
- Approval of an Environmental Code and Construction Management Plan, including agreements for the control and monitoring of construction logistics and aspects such as demolition and construction noise.
- Network Rail consents related to design and construction

Hoarding

- 5.12 The boundary of the site will be established and a 3m high hoarding will be constructed around the entire perimeter of the site. The hoarding will stay fixed in position until completion of the works and handover.

Site Office and Welfare Facility

- 5.13 A welfare office will be provided and will include a canteen and office facility. It will be located in a position that will be appropriate to the stage of works (refer to phasing and logistics plan presented at **Figure 5.2**).

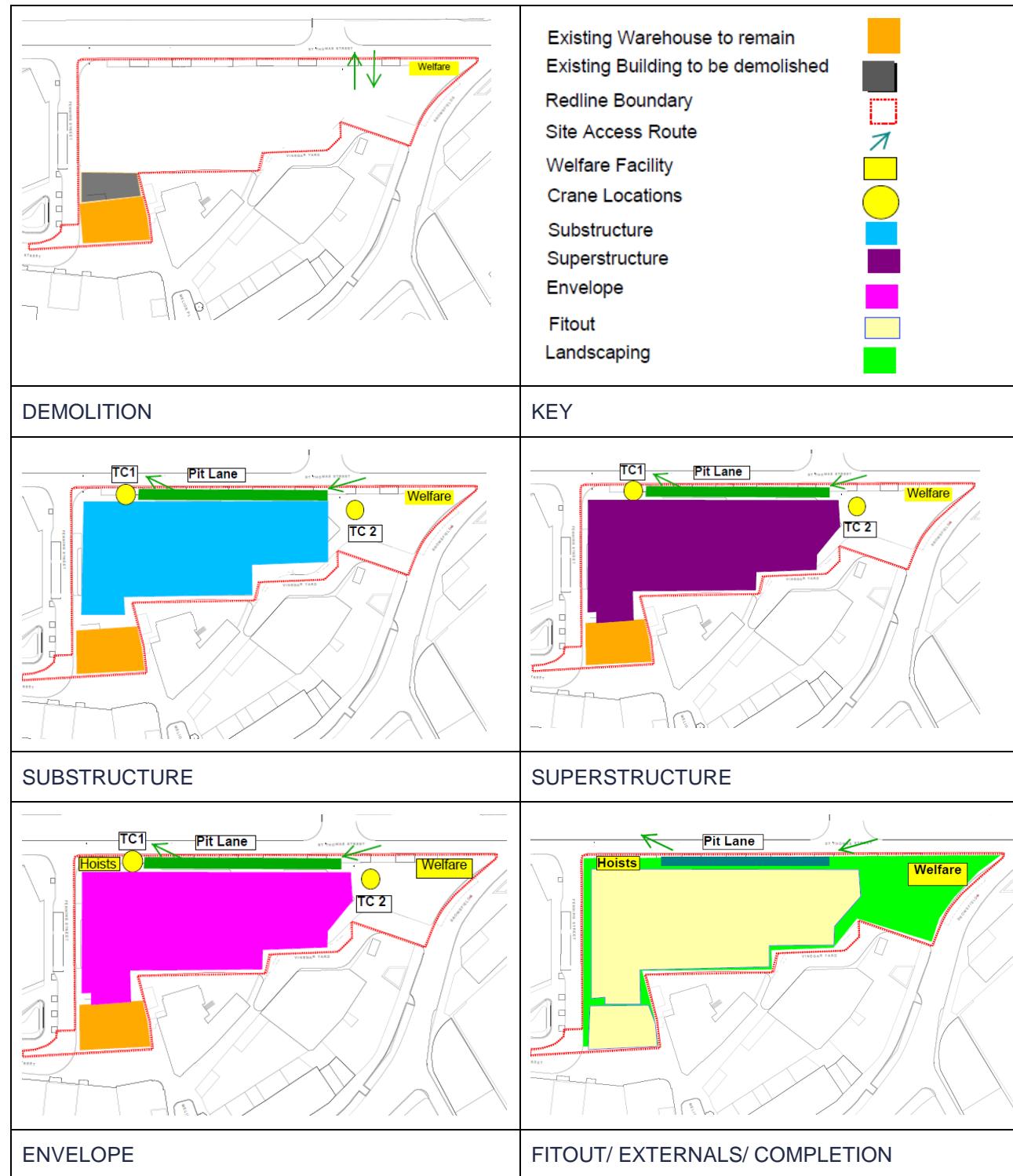
5.14 Safe walking routes will be established as required, and at all times vehicles and pedestrians will be separated with a fixed barrier. Traffic marshals will manage all vehicular movements in and around the site.

Utility Diversions

5.15 New temporary electric, water and waste supplies will be established, to feed tower cranes, hoists and welfare as well as construction areas.

5.16 Any functional utility services that are present across the site (confirmed from the utility surveys) will be diverted as necessary prior to start on site.

Figure 5.2 Indicative Phasing Plan and Logistics Layout



Demolition

5.17 Following establishment of site, including the boundary and hoarding, access routes and welfare office, then the demolition of the small structure to the north of the existing warehouse (located at the south-western portion of the site and demarked in grey in **Figure 5.2**) will commence. Prior to commencement, a sheeted scaffold will be provided along the Fenning Street boundary to provide an additional barrier to the public highway and ensure that all services have been terminated.

5.18 Safe removal of any existing asbestos (confirmed from initial surveys and investigations) will be carried out prior to any soft strip-out of internal fixtures and fittings.

5.19 Following the soft strip-out the structure will be taken down to ground level using a grabber and excavator, damping of structure taking place as required to avoid dust.

5.20 Bricks and concrete will be crushed on-site, stockpiled and used for piling mat.

Substructure (and Excavation) Works

5.21 The Proposed Development includes a three-storey basement beneath the footprint of the Main Building (refer further description – **ES Chapter 4 – Proposed Development (Volume 1)**).

5.22 The following excavation and substructure works will be undertaken:

- Install piling mat, install all piles from ground level, Install capping beam and temporary propping, erect tower cranes, progressively excavate down into the basement using long reach excavators and grabs, cast the concrete substructure, remove temporary propping.
- Secant piled walls are likely to be the preferred form of construction method for the basement retaining walls. The secant wall will offer temporary and permanent support to the surrounding retained ground and existing buildings.
- Piling of the secant wall will be undertaken via the Continuous Flight Auger (CFA) piling method, which is the quietest form of piling, and is a cast in-situ process. Piling will be undertaken into and through the gravel via a guide wall.
- Piling will be progressively installed and capping beam added; two piling rigs are envisaged with a crawler crane lifting reinforcement into position.
- Excavation will commence once the piling and capping beam have substantially progressed and temporary props installed as required. This will coincide with tower crane erection, these will be installed at ground floor level to allow immediate use.
- During all substructure/ excavation works, when ground water is encountered and needs to be cleared, pumping of water will be implemented using settlement tanks and all necessary environmental controls (refer measures listed within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**).
- Once the excavation reaches the basement pile caps will be progressively installed, prioritising lift and stair core areas to release the reinforced concrete core construction ahead of the concrete frame.
- Substructure reinforced concrete works to basement level 3 will be progressively installed following the pile caps including lift pits, core bases and walls and build up progressively to ground level.
- Once the basement floors are installed the propping will be progressively removed.

Superstructure

5.23 Tower cranes will be installed during the basement construction. The first will be located at the north west corner of the site (see **Figure 5.2**), it will be founded on a cantilevered frame, outside the building, to avoid clashing with the building. This crane will require tying to the structure in two locations and because of this a self-climbing model will be selected. A further crane will be installed outside the building to the east.

5.24 The structural frame will be constructed predominantly in concrete, where possible vertical components will be precast off site to reduce site activities and vehicle movements. Post tensioning will optimise structural floor thicknesses and reinforcement quantities.

Craneage Consents

5.25 Before the crane methodology is finalised the construction programme and precise requirements and consents will be discussed and agreed (as required) with The Civil Aviation Authority (CAA), Network Rail and any other consultees. Cranes will be de-rated to suit the proximity of Network Rail assets.

Building Envelope

5.26 The Main Building facades will be unitised panels, which will be hoisted into the floor plates, where they will be lifted into position using manipulator's or monorails to reduce the high demands of hook time by the superstructure. As the Main Building frame progresses, hoists will be installed which will also service the progressive fitting out.

5.27 With the façade and roof completion the tower cranes will be removed and crane tie cladding infill's completed. Scaffolding will not be required for the construction of the building envelope of the tower, and any final jointing on the facades will be dealt with by abseiling.

Fit-Out

5.28 Once substantial unitised panels are installed as part of the construction of the building envelope, the fitout will commence bottom up. The shell and core fit-out will be completed floor by floor to enable tenants the earliest opportunity to carry out their fitting out and subsequent occupation.

5.29 Substations will be installed in basement level 3 once the substructure is completed and safe access is confirmed. Surface water and drainage connections will also be made to the local sewers.

Existing Warehouse Refurbishment

5.30 Works to the existing warehouse will proceed towards the end of the construction programme, brickwork facades will be cleaned and repaired and the new roof structure and windows installed. Once the building is weathertight the interior fitting out will proceed.

Landscaping and Public Realm

5.31 The main areas of landscaping will commence once lifts are complete and available for beneficial use and external hoists removed. The works will be carried out in a patchwork fashion to allow the area to be used to house the project temporary welfare facilities whilst completing the works.

Commissioning and Building Handover

5.32 As each system is completed throughout the Main Building, they will be tested in accordance with the mandatory industry specifications and codes. No enclosed spaces such as ceiling areas and service shafts will be closed until such tests have been completed and signed off. Fire sprinkler systems will be tested and inspected as required, consistent with the requirements under national regulations.

5.33 On completion of all works, the building and systems will be subjected to statutory inspections and testing, before finally being handed over to the building owner / occupiers (i.e. tenants).

MATERIAL QUANTITIES

Demolition

5.34 Table 5.2 provides an estimate of the quantities of material likely to be generated as a result of the demolition works.

Table 5.2 Estimated Demolition Quantities

| Demolition Material Type | Estimated Demolition Quantities |
|--------------------------|---------------------------------|
| Brick / Concrete | 2,000m ³ |
| Structural Steel | 50 tonnes |
| Timber | 2 tonnes |

¹ Building Research Establishment, (2012); BRE Waste Benchmark Data by Project Type. Accessed Online 20.09.2021 URL: http://www.smartwaste.co.uk/filelibrary/benchmarks%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2012.pdf Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2012.pdf

Excavation

5.35 It is estimated that there will be approximately 35,000 m³ of material excavated associated with the bulk dig for the substructure construction.

Construction

5.36 The estimates of bulk material quantities for construction components are provided in Table 5.3.

Table 5.3 Estimated Quantities of Delivered Construction Material

| Materials Delivered | Quantities |
|---|-----------------------|
| Concrete in Piles & secant, linear wall | 6,100 m ³ |
| Concrete to foundations and substructures | 6,400 m ³ |
| Concrete in Superstructures | 8,300 m ³ |
| Substructure Rebar | 1,100 tonnes |
| Superstructure rebar | 2,750 tonnes |
| Structural Steel | 900 tonnes |
| Façade Cladding (incl Brick) and Glazing | 12,860 m ² |
| Roof finishes | 1,800 m ² |
| Blockwork Walls | 1,500 m ² |
| Internal Walls | 6,500 m ² |
| Ceilings | 23,000 m ² |
| Wall Finishes | 8,000 m ² |
| Floor Finishes | 23,000 m ² |
| Hard and Soft Landscaping | 1,900 m ² |

Construction Waste Generation

5.37 Construction waste volumes have been estimated using Building Research Establishment (BRE) Waste Benchmarking data, which outlines likely construction waste arisings in tonnes for new build construction projects, based on real-life data¹. The BRE Benchmark data identified the average tonnes of construction waste per 100m² of floor area (GEA) for medical (Option 1) is 19.1m³ per 100m², 12.7m³ per 100m² for research and development type projects (Option 2) and commercial projects (relevant to both Option 1 and 2) is 19.8m² per 100m².

5.38 Based on this information (and using the commercial category as a worst case and therefore produces the highest amount of construction waste), the Proposed Development is likely to generate approximately 7000m³ of construction waste, which equates to a total of approximately 8,500 tonnes when applying standing construction factors².

5.39 The waste hierarchy and waste reduction will be implemented and where waste is removed from site, as a minimum, and providing there is no significant hazardous waste found (e.g. contaminated soil / asbestos), 95% of all demolition and excavation waste and 98% of all construction waste will be diverted from landfill. Recycling rates also reflect these percentages. This waste will be disposed of offsite via licenced Material Recovery Facilities (demolition and construction waste) and land recovery projects (excavation waste), as per the Environment Agency waste facility permitting codes.

PLANT AND EQUIPMENT

5.40 Consideration has been given to the types of plant that are likely to be used during the demolition and construction of the Proposed Development. The plant and equipment associated with work stages outlined within the programme is set out in Tables 5.4 to Table 5.6 below.

² Waste and Resources Action Plan (WRAP); Accessed Online 20.09.2021 [URL: <http://www.wrap.org.uk/sites/files/wrap/Reporting%20Guidance.pdf>]

Table 5.4 Plant and Equipment Schedule – Demolition

| Equipment | Power Rating | Equipment Size |
|-------------------------|--------------|----------------|
| Mobile telescopic crane | 280 kW | 100 t |
| Tracked crusher | 172 kW | 47 t |
| Tracked excavator | 228 kW | 44 t |

Table 5.5 Plant and Equipment Schedule – Substructure / Excavation

| Equipment | Power Rating | Equipment Size |
|-----------------------------------|--------------|-----------------------|
| Tracked / wheeled 360° excavators | 226kW | 40t |
| Breaker mounted on excavator | 121kW | (15t) 1 650kg breaker |
| Crushers | 172kW | 47t |
| Wheeled mobile crane | 275kW | 100t |
| Mobile cranes | 275kW | 35t |
| Tower cranes | - | - |
| Hand / power tools | 106kW | - |
| Crawler mounted rig | 270kW | 100 t |
| Scaffolding | - | - |
| Skips and skip trucks | - | - |

Table 5.6 Plant and Equipment Schedule – Superstructure and Envelope

| Equipment | Power Rating | Equipment Size |
|--------------------------|--------------|----------------|
| Mobile cranes | 275kW | 100t |
| Tower cranes | - | - |
| Hand / power tools | 106kW | - |
| Scaffolding | - | - |
| Mobile access platforms | 35kW | 8t |
| Goods / passenger hoists | - | 500kg |
| Goods / passenger hoists | - | 500kg |
| Skips and skip trucks | - | - |

HOURS OF WORK

5.41 The anticipated core working hours for demolition and construction works are:

- 08:00 – 18:00 hours on weekdays;
- 08:00 – 14:00 hours on Saturdays; and
- No working on Sundays, Bank or Public Holidays.

5.42 In order to maintain the above working hours, the Main Contractor may require at certain times a period of up to one hour before and after normal working hours to start and close down activities (this will not include works that are likely to exceed any agreed maximum construction works noise levels). Specialist construction operations and deliveries may also be required to be carried outside these core hours in agreement with LBS and other relevant parties.

TRAFFIC MANAGEMENT

Preferred Traffic Routes

- 5.43 The preferred transport routes to and from the site to be used by heavy goods vehicles (HGVs) for deliveries of materials to the site and removal of wastes will be agreed with the LBS prior to commencement of construction works.
- 5.44 Direct access and egress to and from the site will be via St Thomas Street, immediately north of the site, which is a westbound only road (see site access points – **Figure 5.2**).
- 5.45 Construction vehicles approaching the site from the north (travelling south across London Bridge and onto the A3) are proposed to move in an anti-clockwise direction along the A2198 (located to the south of the site), travelling eastbound and then turning northward along Tower Bridge Road/A100, before turning left to access St Thomas Street via A200/Druid Street and Crucifix Lane.
- 5.46 The preferred route for vehicles from the north are presented in **Figure 5.4**, and include routes via the A501, the A10 or the A11, before accessing onto the A10 heading towards London Bridge.
- 5.47 Vehicles coming up from the south would access the site either via the A201 and on to Tower Bridge Road heading north, or via the A2 and on to Tower Bridge Road. The preferred route for vehicles from the south would either be via the A2 or the A3.
- 5.48 Vehicles egressing the site will either use Fenning Street or St Thomas Street, around 50% will use each route, typically those travelling north will use St Thomas St to access the A3 and the remainder will use Fenning Street to access the A3 south and A2. Routes will be managed to ensure that overloading does not occur.
- 5.49 See **Figure 5.3** and **Figure 5.4** for the likely site access routes.

Figure 5.3 Access and Egress Routes

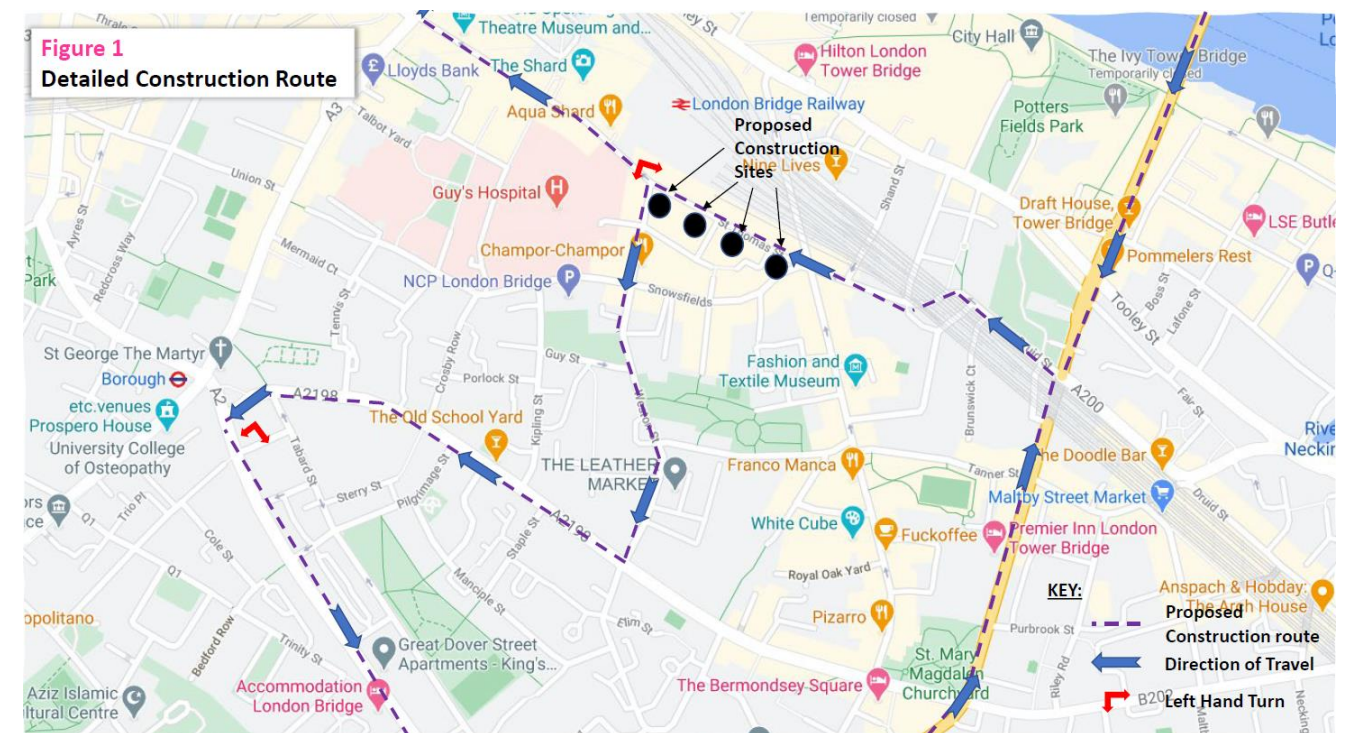
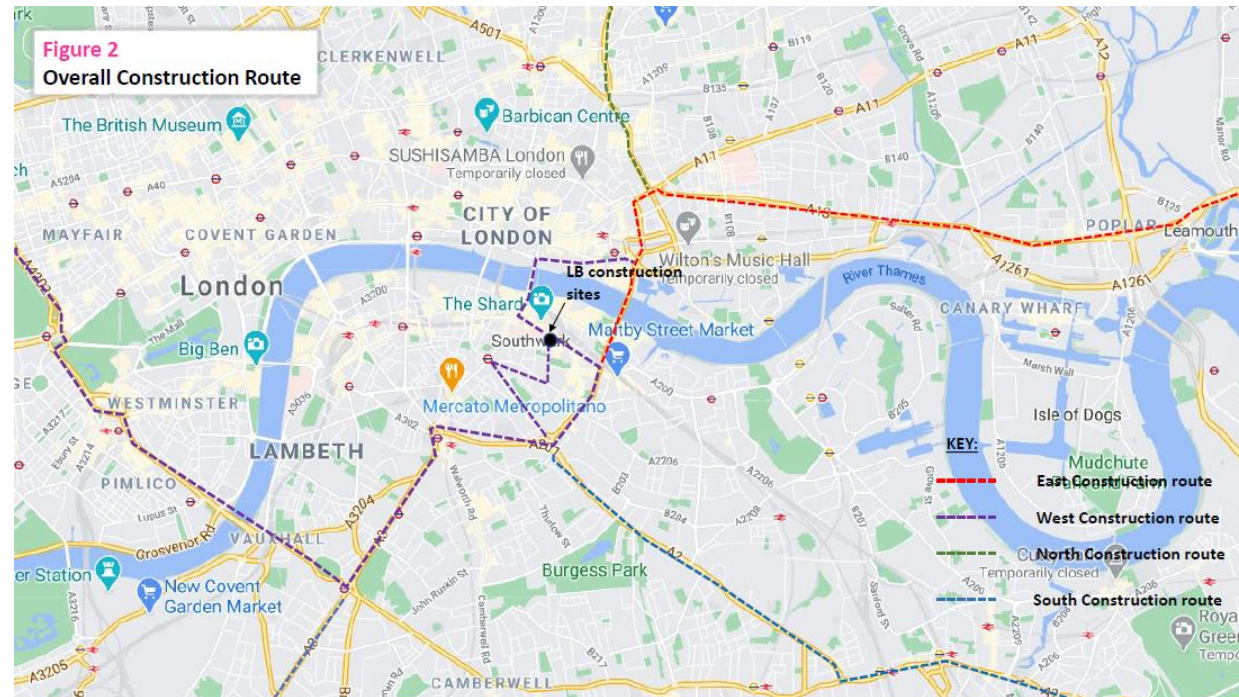


Figure 5.4 Access and Egress Routes in wider context



5.50 The LBS will be consulted prior to the commencement of demolition and construction works about providing direction signage on the surrounding road network to avoid vehicles using inappropriate routes to reach the site.

Site Access

5.51 Upon commencement (and subject to approval by LBS / TfL) the St Thomas Street footpath will be temporarily closed and a pit lane created using a portion of the existing carriage way for materials deliveries and unloading, remaining in place for the fitout period and progressively modified to allow the external works completion.

5.52 Initially, for demolition and piling, vehicles will enter and leave the site via the crossover on St Thomas Street where Vinegar Yard Road is to be closed off. Once these activities are complete and the substructure works commence the primary access will be the pit lane formed in St Thomas Street with minor use of the Vinegar Yard entrance that can be carried out at that end of the site.

5.53 Pedestrian access will be via Snowfields directly into the welfare facility to ensure that people are segregated from construction vehicles and plant.

5.54 The site entrances will have specific Health and Safety signage. Additional signage will be provided for pedestrians / visitors and vehicles to ensure they are segregated and use the correct gates. The required Considerate Constructors boards will also be displayed with the emergency contact information.

5.55 No car parking will be available on site for construction staff as the assumption is that staff members will access the site via public transport.

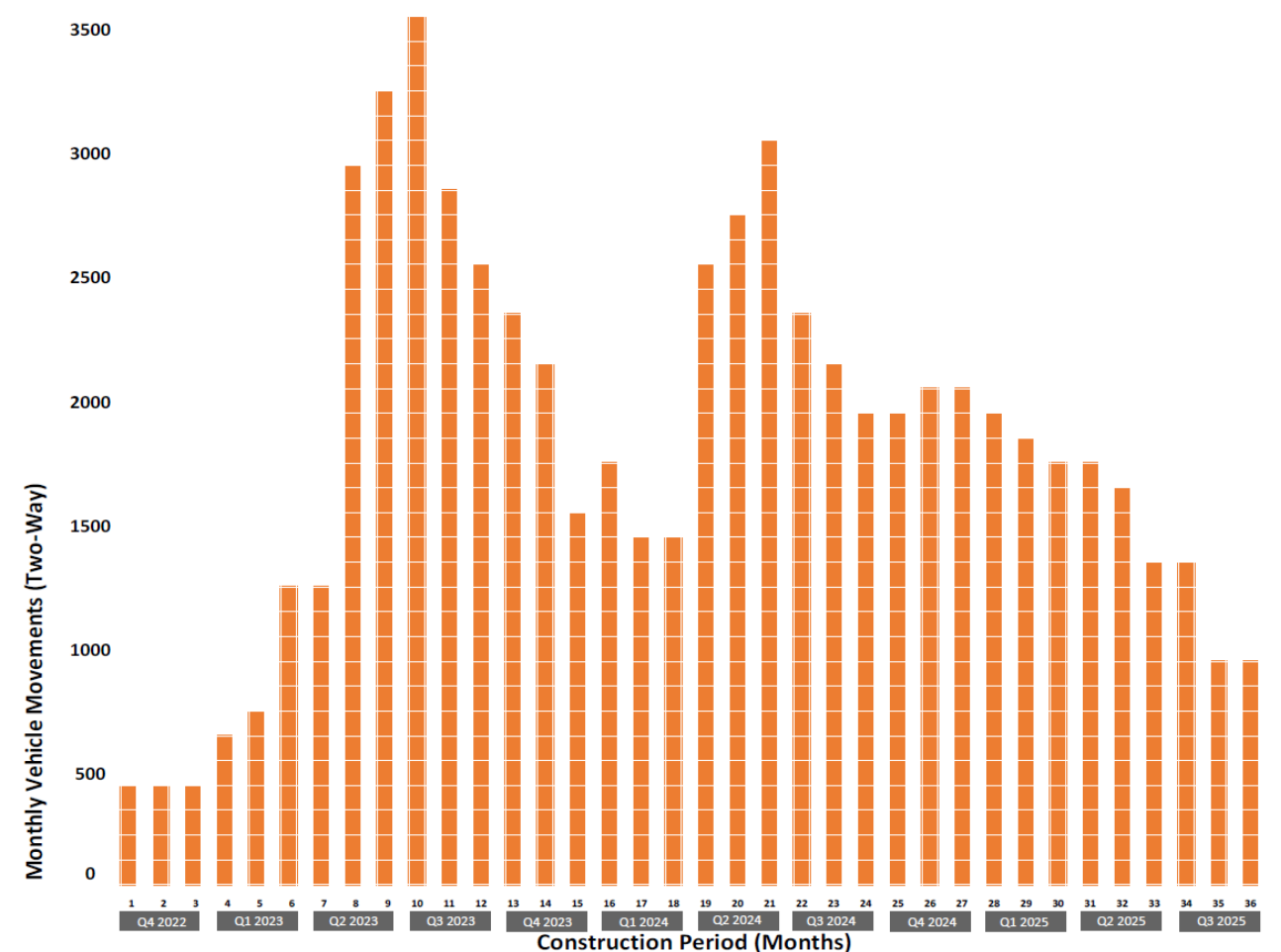
Vehicle Movements

5.56 Data relating to vehicle movements in terms of the estimated number of movements per month, (movements are 2-way, meaning one vehicle in and one out is equal to 2 movements) is presented within Figure 5.5.

5.57 The data on road vehicle movements has identified periods which represent a peak in the onsite works, across the demolition and construction programme, as follows:

- Months 8-10 (approx. Q2-Q3, Year 2): which represents the excavation and substructure works; and
- Months 19-22 (approx. Q2 to Q3, Year 3): which represents the overlap of: superstructure construction, envelope and fit out.

Figure 5.5 Estimated Number of Vehicle Movements per Month (2-way)



5.58 The proportion of heavy-duty vehicles (HDVs) will vary during the demolition and construction period, corresponding to the activities undertaken on site, however an average proportion across the length of the programme is 70% HDV, with the remainder being lighter vehicles.

5.59 The estimated number of two-way vehicle movements for month 10 (peak) is 3,402 (during the excavation and substructure works). This equates to a peak of approximately 75 vehicles accessing the site (one-way) per working day. This equates to an estimated annual average of 36 vehicles per day (25 of which are assumed to be HDVs). As work progresses, for other key stages it is expected that the proportion of HDVs visiting the site will decrease to approximately 40% of total vehicles accessing the site.

Loading / Unloading Areas

5.60 Initially a segregated area for the safe loading and unloading of road vehicles will be implemented on-site and traffic marshals will direct vehicles on to and off-site. Loading and unloading of materials and equipment will occur within the site boundary as far as practicable during the piling works, thereby minimising congestion on the adjacent highway network. Following the piling works deliveries and collections will be via the pit lane in St Thomas Street.

Closures and Diversions

5.61 Short-term closures of St Thomas Street may be required in order to erect and dismantle tower cranes and to deliver large items of building plant. The requirement for short-term road closures will be discussed and agreed with LBS and other stakeholders (including adjacent construction projects) prior to the commencement of works requiring the road closure in question.

Deliveries

5.62 The restrictive nature of the surrounding infrastructure will demand careful planning and control of deliveries to avoid congestion. A Construction Logistics and Interface Manager will manage all deliveries and ensure the

coordinated flow of vehicles to and from the site. Deliveries will be managed by a system of timed / booked deliveries, which will be implemented and controlled by the Construction Logistics and Interface Manager. This will ensure that access and adjoining roads do not become congested. The intent with all deliveries is to unload them from within the agreed areas. Strict control to prevent temporary parking on kerbsides in the vicinity of the site will also be enforced.

- 5.63** To ensure the timely management of deliveries to the site, the following key considerations will be enforced:
- No stopping or parking on the adjoining roads to the site;
 - All deliveries are to be made during the stipulated site working hours;
 - All deliveries must be booked in advance (i.e. at least a week) with the Construction Logistics and Interface Manager. Unscheduled deliveries will not be accepted; and
 - The size of and type of delivery vehicles will be stipulated where necessary to suit the construction process and access available.
- 5.64** To further minimise the likelihood of congestion, strict monitoring and control of all vehicles entering, exiting and travelling across the site will be maintained, including the adoption of the following measures (where appropriate):
- The setting of specific delivery and collection times;
 - Consolidation of deliveries wherever possible;
 - A system of 'just in time' deliveries; and
 - The requirement for prior authorisation when visiting the site by vehicle, which will be managed by the Construction Logistics and Interface Manager. Delivery schedules will be agreed with management at least a week in advance of delivery.
- 5.65** The opportunity to mitigate further the potential for congestion by delivery vehicles by providing parking off-site will be explored when detailed planning for the construction works and logistics is undertaken. The possibility of identifying a holding area will be investigated along the traffic routes. This would allow vehicles to be held until the time they are required on-site. Should delivery vehicles be managed by parking off-site, the details will be outlined within the Construction Environmental Management Plan (CEMP) and approved prior to works commencing.
- 5.66** The Construction Logistics and Interface Manager will be assisted by trained banks men and entrance security personnel to ensure vehicles arriving and leaving the site are coordinated with the works on site.
- 5.67** One of the key success factors for the project will be to coordinate our works with that of the other construction projects in the St Thomas Street East development, working harmoniously with their respective teams and other stakeholders.
- 5.68** To this end the appointed contractor will take a leading role in the following:
- **Coordinated Programmes** – It is likely that the projects will run concurrently, a coordinated Master Programme will high-light barriers in advance and will allow opportunities to be developed.
 - **Traffic Masterplan** - Develop a masterplan with the other developments to include traffic routes, consolidation areas, holding areas, materials loading, swept path analysis, vehicle timings, Temporary Traffic Management, road closures, crane erection and dismantling, Network Rail, LBS and TfL approvals.
 - **Utilities Masterplan** – Coordinated utilities schedule, Coordinated contact with utility providers, Joint studies of existing services, Sharing of utilities works and Design of combined schemes.
 - **Community Liaison** – A combined team to provide a holistic approach.
 - **Coordination with Emergency Services** – A combined Emergency Management Plan

ENVIRONMENTAL CONSTRUCTION MANAGEMENT AND MONITORING

5.69 *ES Chapter 15 – Mitigation and Monitoring (Volume 1)* presents the environmental management and mitigation measures that the Applicant is committed to implementing throughout the demolition and construction works to, either eliminate, or reduce the significance of any likely significant environmental effects.

5.70 The environmental management and mitigation measures will form the basis of the CEMP that will be implemented over the duration of the works. The CEMP will likely comprise a number of supporting management plans / documents, for example a Construction Logistics Plan (CLP). It is anticipated that the preparation and implementation of these plans will be secured through appropriately worded planning conditions / planning obligations. A draft Construction Environmental Management Plan is also submitted in support of the planning application. An outline of the proposed contents of the CEMP is presented below.

Construction Environmental Management Plan

5.71 The Applicant will develop and implement a CEMP through which mitigation and compliance with the Greater London Authority's (GLA) 'Sustainable Design and Construction Supplementary Planning Guidance (SPG)'³ and 'The Control of Dust and Emissions During Construction and Demolition SPG'⁴ will be managed. The CEMP will also refer to industry standards, best practice and guidance, such as the 'Considerate Constructors Scheme'⁵. The CEMP will include roles and responsibilities, details of control measures and activities to be undertaken to minimise environmental effects, and monitoring and record-keeping requirements.

5.72 The CEMP will be periodically reviewed and regular environmental audits of its implementation will be undertaken during the construction phase.

5.73 The CEMP is anticipated to include (and will not be limited to) the following matters listed below in order to minimise the environmental effects during the period of construction of the Proposed Development:

- Construction Method Statement (CMS);
- Considerate Constructors Scheme;
- Neighbour and public relations.
- Management of effects from noise, vibration and air quality;
- Waste management;
- Ground conditions;
- Protection of water resources; and
- Energy and water usage.

Construction Method Statement

5.74 Sitting within the CEMP, the CMS will outline the different activities and procedures to be undertaken in order to complete the various construction works.

5.75 The CMS will include the following elements:

- The construction programme;
- A programme of the construction works, highlighting the various stages and their context within the project, including a full schedule of materials and manpower resources, as well as plant and equipment schedules;
- Details (including plans) of enabling works, including provision of temporary services, utility diversions, and re-alignment / replacement of hoarding;
- Detailed site layout and access arrangements, including plans for storage, site office set-up, vehicular movements, site access and egress;
- Details of the transport routes for HDVs;

³ Greater London Authority (2014); Sustainable Design and Construction Supplementary Planning Guidance (SPG)

⁴ Greater London Authority (2014); The Control of Dust and Emissions during Demolition and Construction SPG

⁵ Considerate Constructors Scheme (1997); Considerate Constructors Scheme. Accessed at: <https://www.ccscheme.org.uk/ccs-ldt/what-is-the-ccs2/>

- Prohibited or restricted operations (i.e. locations, site working hours, etc.);
 - Details of operations that are likely to result in disturbance, with an indication of the expected duration of each phase with key dates, including a procedure for prior notification of the LBS and relevant statutory and non-statutory consultees (including neighbours) so that local arrangements can be agreed in advance;
- A procedure to ensure communication is maintained with the LBS and the local community to provide information on any operations likely to cause disturbance (e.g. through meetings and newsletters); and
- Provision for affected parties to register complaints and the procedures for responding to complaints.

Considerate Constructors Scheme

- 5.76** The site will be registered with the 'Considerate Constructors Scheme'. This scheme ensures that contractors carry out their operations in a safe and considerate manner with due regard to passing pedestrians and road users.
- 5.77** The Principal Contractor will aim to exceed the Considerate Constructors minimum requirements.
- 5.78** In addition to the standard banner and information board erected as part of the Considerate Constructors Scheme, an additional information board will be displayed on the external hoarding around the site to enable it to be read by the general public. The additional board will contain project specific information relating to the progress of the Proposed Development. This will be periodically updated to include any changes to the site layout and access routes.

Neighbour and Public Relations

- 5.79** A key aspect of the successful management of the project will be the maintenance of good relations with key neighbours within the vicinity of the site and the general public. The contractor will endeavour to communicate with all those affected by the works and wherever possible give notice of forthcoming activities on site, particularly those that may have an impact.
- 5.80** Engagement with the community could be achieved by:
- Facilitating community group regular meetings;
 - Providing specific notices, emails and warning letters for ad hoc construction activities, for example, wide loads to be delivered out of hours;
 - Providing quarterly newsletters on progress and forthcoming activities; and
 - Engaging with the neighbouring construction projects to ensure a coordinated approach and minimizing disruption to the local community
- 5.81** In order to ensure that any comments or feedback from the public or neighbours are captured and effectively responded to, a complaints register will be implemented. The register will be held at the site office and online. All complaints will be recorded for action in the register. Complaints will be responded to in writing within prescribed timescales outlined in the CEMP (unless alternatively agreed in writing) and following the appropriate action.

Waste Management

- 5.82** A key objective during the period of demolition and construction works would be to reduce the amount of waste generated and exported from site. This approach complies with the waste hierarchy of the Waste Management Plan for England 2013⁶ whereby the intention is first to minimise, then to treat at source or compact and, finally, to dispose of off-site as necessary.
- 5.83** All contractors would be required to investigate opportunities to either avoid, minimise and reduce waste generation by means of appropriate measures either involving material selection or management of handling materials. Full details of the measures proposed are presented within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**.

- 5.84** If waste can be re-used at the site, exemption or permit forms would be obtained from the Environment Agency in advance.
- 5.85** The disposal of waste or other materials removed from the site would be in accordance with the requirements of all relevant legislation, including:
- The Environmental Permitting (England and Wales) Regulations 2016⁷;
 - The Waste (England and Wales) Regulations 2011 (as amended)⁸;
 - Clean Neighbourhoods and Environment Act 2005⁹; and,
 - Contractors would be encouraged to adopt the principals of the Site Waste Management Plans Regulations 2008 (repealed)¹⁰ as good working practice.
- 5.86** The potential risks associated with waste disposal would be adequately managed through industry recognised standards and best practice measures (full details of the measures proposed are presented within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**).
- 5.87** The detailed CEMP prepared by the Principal Contractor prior to the commencement of works would contain the measures to manage and dispose waste. The CEMP, in terms of waste management, would contain:
- Classification of all wastes;
 - Performance measures and target setting against estimated waste forecasts;
 - Measures to minimise waste generation;
 - Opportunities for reuse and recycling;
 - Provision for the segregation of waste streams on site that are clearly labelled;
 - Recording of proposed carriers and licences for disposal sites;
 - An audit trail encompassing waste disposal activities and waste consignment notes;
 - Measures to avoid fly tipping by others on land being used for construction;
 - Measures to provide adequate training and awareness through toolbox talks; and
 - Considerable alternatives means of removing waste other than by road.

Site Health & Safety

- 5.88** The Principal Contractor would carry out their duties in accordance with the Construction Design Management Regulations (CDM)¹¹. They would ensure that all site personnel have the correct training and qualifications, every site visitor would have a site induction, there would be a programme of toolbox talks for site operatives and the construction works would be tidy and well maintained with all safety measures in place. Appropriate Personal Protective Equipment (PPE) would be worn by all operatives at all times when on the construction site.

Water Usage

- 5.89** Where existing pipes are likely to be disrupted by construction works, new potable water supply pipes would be installed.
- 5.90** Processes during the construction phase require large volumes of water supply include mixing (especially relating to concrete), water for washing down and potable water for sanitary facilities for the construction workforce.
- 5.91** It is expected that the water supply to the construction site during the demolition and construction works will be provided from the existing Thames Water sources via an application to use an existing water supply for building purposes.
- 5.92** The CEMP will outline the appropriate strategy for the sustainable management of water use across the site. The CMP will require relevant contractors during the period of works to investigate opportunities to sustainably

⁶ Accessed Online: <https://www.gov.uk/government/publications/waste-management-plan-for-england>

⁷ Statutory Instruments 2016 No. 1154; The Environmental Permitting (England and Wales) Regulations 2016

⁸ Environmental Protection, England and Wales, 2014. The Waste (England and Wales) (Amendment) Regulations 2014

⁹ HMSO, 2005. Clean Neighbourhoods and Environment Act

¹⁰ DEFRA, 2008. The Site Waste Management Plans Regulations, repealed

¹¹ Accessed online: <https://www.hse.gov.uk/construction/cdm/2015/index.htm>

manage the use of water. Full details of the measures for the management of water consumption on-site are presented within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**.

Energy Usage

- 5.93 All relevant contractors would be required to investigate opportunities to minimise and reduce the use of energy so as to avoid any likely significant adverse effects associated with excessive energy consumption and resulting greenhouse gas emissions.
- 5.94 Measures to minimise energy usage are presented within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**.

Monitoring, Inspection and Auditing

- 5.95 The CEMP would define responsibilities and procedures for the management of the potential impacts on the environment arising during demolition, enabling and construction. A monitoring programme of the environmental effects of demolition and construction would be implemented to agreed LBS requirements. This programme would:
 - Evaluate the effectiveness of environmental mitigation, and identify environmental problems and appropriate responses at an early stage;
 - Ensure that the works are carried out in accordance with the provisions of the CMP; and
 - Identify and implement any environmental improvements that would contribute to the overall environmental performance of the Proposed Development.
- 5.96 To ensure that the contractors are adhering to the CEMP, the Applicant would require that site inspections and more formal audits would be undertaken and a checklist pro-forma would be used, which would cover the environmental issues addressed in the CEMP.
- 5.97 Where a problem is identified, corrective action would be identified and implemented in conjunction with the Site Manager and Principal Contractor.
- 5.98 It is envisaged that there would be a requirement for regular reporting of monitoring and auditing to LBS, and LBS would be asked to review implementation of the protective measures as necessary during demolition and construction and would have direct access to the monitoring representative to ensure that any non-compliances with the requirements of the CEMP are speedily rectified.

Emergency Response and Environmental Incidences

- 5.99 Protocols to be implemented on-site in instances of emergencies and environmental incidences would be set out within the CEMP for approval by LBS.
- 5.100 Before construction works commence on-site, emergency procedures and fire exit routes from the site would be identified within the fire safety plan. Throughout the course of the construction works, these would be regularly inspected and maintained. The fire safety plan would be updated regularly as construction works progress, particularly as areas are progressively completed, and as the means of escape from the evolving buildings change. Fire alarm points and extinguishers would be situated at each floor of the buildings at the stair cores and within main corridors.
- 5.101 Site management, operatives and any visitors to the site would undergo an induction to ensure they are briefed on what actions to take in case of an emergency and also in case of an environmental incident.

General Site Management

- 5.102 Hoardings erected around and within the site (see section 'Site Establishment and Enabling Works') to provide a clear and secure demarcation between operational activities and other areas with an acceptable visual outlook. The hoarding would be used to provide information regarding the Proposed Development and the progress of the construction works. Particular attention would be paid to locations supporting high volumes of pedestrian movement, demolition and construction routes, access gates and security arrangements.
- 5.103 A 'clean site' policy would be maintained to keep the site clean and tidy internally, and contractors and their subcontractors would be expected to maintain this policy. For example, materials would be stored with care, spills would be cleaned up immediately and various dust mitigation measures would be put in place and managed through the CEMP. Measures to maintain the site and avoid or reduce impacts on the surrounding area are presented within **ES Chapter 15 – Mitigation and Monitoring (Volume 1)**.

- 5.104 Staff facilities would be kept clean and maintained in good working order. Waste would be collected regularly, with food waste removed from site daily. Smoking areas would be provided as necessary. They would be located away from sensitive boundaries and neighbouring residences and businesses.
- 5.105 Any damage incurred to the public realm and highway would be repaired in conjunction with LBS and TfL requirements. A street sweeper would also be employed as and when required during the demolition, piling and excavation periods to ensure the surrounding streets remain clean during the works.