

# Construction/ Demolition Management Plan

pro forma

# Contents

Revisions	3
Introduction	4
Timeframe	6
<a href="#">Contact</a>	7
<a href="#">Site</a>	9
<a href="#">Community liaison</a>	12
<a href="#">Transport</a>	14
<a href="#">Environment</a>	26
<a href="#">Agreement</a>	31

# Revisions & additional material

Please list all iterations here:

Date	Version	Produced by
24.06.2020	Draft	Paul Millar
28.06.2020	Rev 1	Paul Millar

## Additional sheets

Please note – the review process will be quicker if these are submitted as Word documents or searchable PDFs.

Date:	Version:	Produced by
27.06.20	Rev 1	Erith Contractors
<b>Appendix A:</b>	<b>Programme of Works</b>	
<b>Appendix B:</b>	<b>Details of CMP Communication/Consultation with neighbours</b>	
<b>Appendix C:</b>	<b>Neighbourhood Liaison Plan</b>	
<b>Appendix D:</b>	<b>Surrounding Projects/Schemes</b>	
<b>Appendix E:</b>	<b>Traffic Management Plan</b>	
<b>Appendix F:</b>	<b>Environmental Management Plan</b>	
	<b>Noise Dust Vibration Monitoring Plan</b>	
<b>Appendix G:</b>	<b>NRMM</b>	
<b>Appendix H:</b>	<b>Proposed Hoarding Lines</b>	
<b>Appendix J:</b>	<b>Air Quality Assessments</b>	
<b>Appendix K:</b>	<b>Cumulative Impact Assessment</b>	
<b>Appendix L:</b>	<b>Site Environmental Management Plan</b>	

# Introduction

The purpose of the **Construction Management Plan (CMP)** is to help developers to minimise construction impacts and relates to all construction activity both on and off site that impacts on the wider environment.

It is intended to be a live document whereby different stages will be completed and submitted for application as the development progresses.

The completed and signed CMP must address the way in which any impacts associated with the proposed works, and any cumulative impacts of other nearby construction sites, will be mitigated and managed. The level of detail required in a CMP will depend on the scale and nature of development. Further policy guidance is set out in Camden Planning Guidance **(CPG) 6: Amenity** and **(CPG) 8: Planning Obligations**.

This CMP follows the best practice guidelines as described in the [Construction Logistics and Community Safety \(CLOCS\)](#) Standard and the [Guide for Contractors Working in Camden](#).

Camden charges a [fee](#) for the review and ongoing monitoring of CMPs. This is calculated on an individual basis according to the predicted officer time required to manage this process for a given site.

---

The approved contents of this CMP must be complied with unless otherwise agreed with the Council in writing. The project manager shall work with the Council to review this CMP if problems arise during construction. Any future revised plan must also be approved by the Council and complied with thereafter.

It should be noted that any agreed CMP does not prejudice or override the need to obtain any separate consents or approvals such as road closures or hoarding licences.

If your scheme involves any demolition, you need to make an application to the Council's Building Control Service. Please complete the "[Demolition Notice](#)."

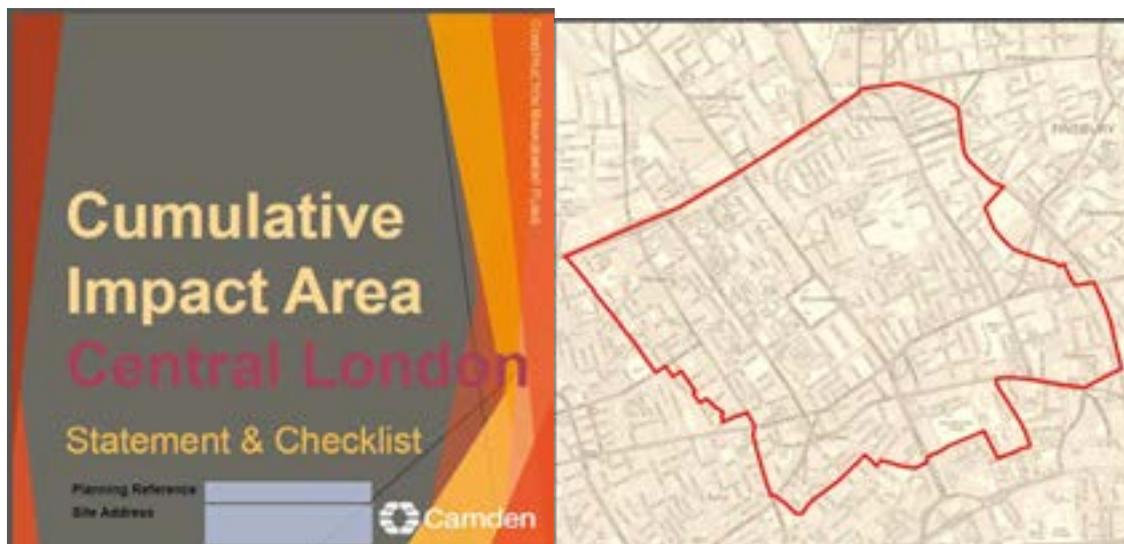
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. It is preferable if this document, and all additional documents, are completed electronically and submitted as Word files to allow comments to be easily documented. These should be clearly referenced/linked to from the CMP. Please only provide the information requested that is relevant to a particular section.

(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearance, delivery of plant & materials, construction etc.)

Revisions to this document may take place periodically.

**IMPORTANT NOTICE:** If your site falls within a Cumulative Impact Area (as of 03/02/2020 to 03/08/2020 there is only one established CIA for the Central London area) you are required to complete the CIA Checklist and circulate as an appendix to the CMP and included as part of any public consultation – a CMP submission will not be accepted until evidence of this has been supplied.

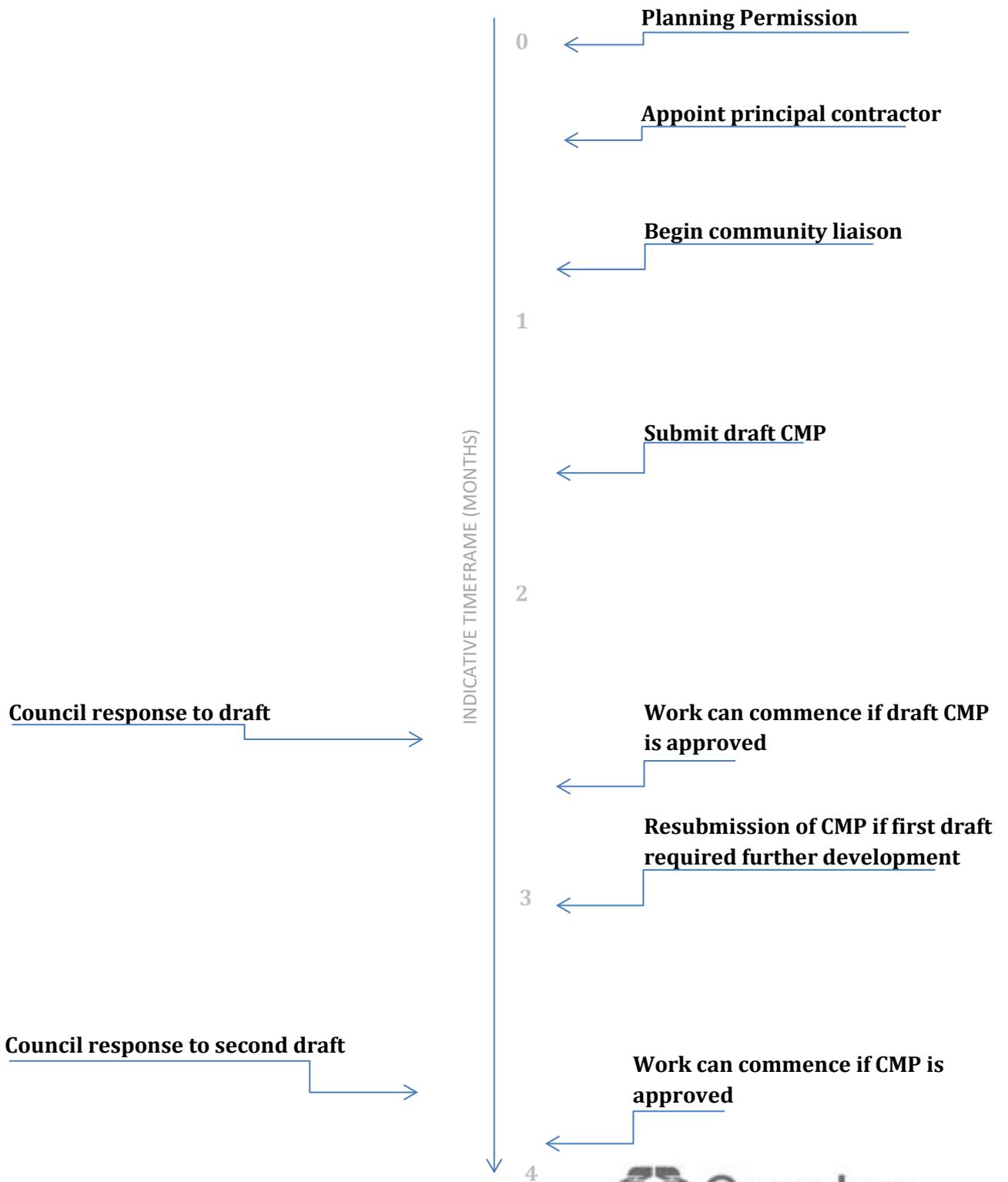
The CIA Checklist can be found at <https://www.camden.gov.uk/about-construction-management-plans#sumf>



# Timeframe

## COUNCIL ACTIONS

## DEVELOPER ACTIONS



# Contact

1. Please provide the full postal address of the site and the planning reference relating to the construction works.

Address: **1 Kemble St and 43-59 Kingsway, London, WC2B 4AN**

Planning reference number to which the CMP applies: 2019/2773/P

2. Please provide contact details for the person responsible for submitting the CMP.

Name: Paul Millar

Address: Erith Contractors, 52-54 St John Street, London, EC1M 4HF

Email: paul.millar@erith.com

Phone: 07584 233922

3. Please provide full contact details of the site project manager responsible for day-to-day management of the works and dealing with any complaints from local residents and businesses.

Name: Paul Millar

Address: Erith Contractors, 52-54 St John Street, London, EC1M 4HF

Email: paul.millar@erith.com

Phone: 07584 233922

4. Please provide full contact details of the person responsible for community liaison and dealing with any complaints from local residents and businesses if different from question 3. In the case of Community Investment Programme (CIP), please provide contact details of the Camden officer responsible.

Name: Cherrie O’Kane

Address: Erith Contractors, 52-54 St John Street, London, EC1M 4HF

Email: cherrie.o'kane@erith.com

Phone: 07894 259321

5. Please provide full contact details including the address where the main contractor accepts receipt of legal documents for the person responsible for the implementation of the CMP.

Name: Scott Excell

Address: Erith Contractors, 52-54 St John Street, London, EC1M 4HF

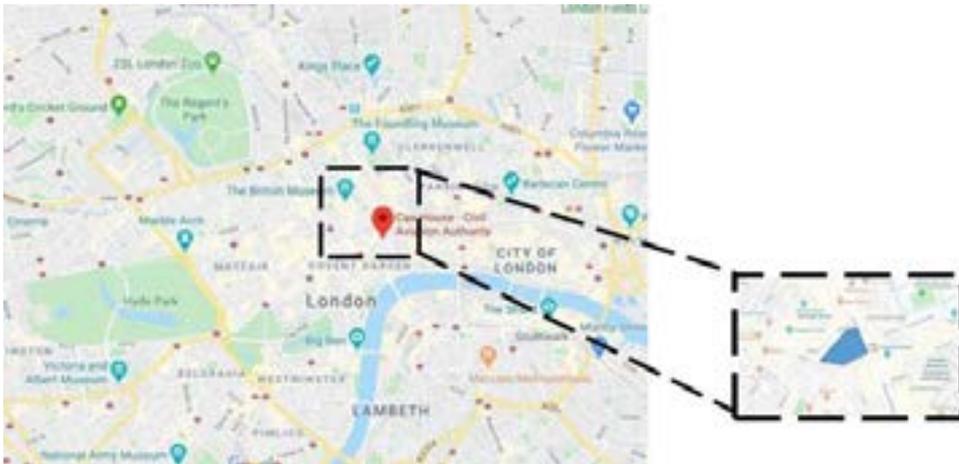
Email: Scott.Exell@erith.com

Phone: 07827 342239

# Site

6. Please provide a site location plan and a brief description of the site, surrounding area and development proposals for which the CMP applies.

Space House is situated within the London Borough of Camden. Space House was constructed in the late 1960's and it comprises of the Tower Block and Kingsway House which are connected via a link bridge structure. The area is surrounded by a mixture of retail, residential, commercial and landmark properties and high level of pedestrian traffic, cyclist activity with busy London underground infrastructure in the vicinity.



Overview of the main items of contract works:

- Site establishment including welfare and hoarding.
- Installation of temporary electrics and services.
- Mechanical and Electrical Surveys.
- Protection to services such as the UKPN substation
- MEP disconnections and plant removal
- Scaffold erection to encapsulate the works.
- Monitoring and surveying works
- Asbestos Removal works.
- Soft strip of all remaining non-structural items site wide to both structures
- Removal of all windows and glazing.
- Erection of Tower Crane
- Temporary Works installation to Precast façade panels
- Removal of Precast façade panels.
- Temporary Works to basement retaining walls
- Structural opening up works to basement (One Kimble Street Tower).
- Ground Floor demolition works to Kingsway House.

7. Please provide a very brief description of the construction works including the size and nature of the development and details of the main issues and challenges (e.g. narrow streets, close proximity to residential dwellings etc)

#### Construction Phase Activities

Following a pre-implementation phase of work establishing and preparing the site the demolitions phase will include the following activities:-

- Removal of windows and fenestration (ground floor and selected areas above).
- Erection of Tower Crane
- Removal of roof plant and associated fixtures/fitings
- Temporary Works installation to Precast façade panels (Tower 15<sup>th</sup> Floor)
- Removal of Precast façade panels. (Tower 15<sup>th</sup> Floor)
- Temporary Works to basement retaining walls
- Structural opening up works to basement (One Kemble Street Tower).
- Ground Floor demolition works to Kingsway House.
- Removal of former filling station structure and two basement access ramps

*The specific constraints are identified are as follows:*

- Traffic logistics, pedestrian volumes and neighbouring deliveries.
- High volume of traffic and foot flow on Kingsway Road
- Adjacent residencies, offices, commercial premises and maintaining pedestrian access to the nearby pedestrian footpaths. Holborn Underground Station and Covent Garden Station in close proximity to the works
- Coordinating deliveries to site
- Maintain access to UKPN substations on site
- Maintain 4no Parking bays for UKPN on site.
- Identification of Existing Services
- Heritage items on site
- 24hr manned Security to prevent urban explorers
- Noise, dust and vibration controls.
- Protection of the public
- Neighbourhood Liaison
- Access to and egress from site
- Phasing of the Works
- Removal of material
- Liaison with Camden Council Highways and Environmental.
- Liaison with residents and businesses in the vicinity of our works
- Management of nuisance from noise, dust and vibration
- Protection of listed façade stone and other items/structures within the site boundary
- BREEAM compliance with targeted requirements

8. Please provide the proposed start and end dates for each phase of construction as well as an overall programme timescale. (A Gantt chart with key tasks, durations and milestones would be ideal).

#### **Implementation (Construction) Phase Activities**

Start Date: September 2020 (anticipated, actual date subject to CMP approval and discharge of all pre-implementation conditions and obligations.)

Duration of Works:

24 Weeks construction/enabling period

See **Appendix A** for programme of works

9. Please confirm the standard working hours for the site, noting that the standard working hours for construction sites in Camden are as follows:

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

Site working hours are as follows:

Working times on site

Monday to Friday - 08:00 to 18:00

Saturday - 08:00 to 13:00 (CIA agreement dependant)

Sunday - Only with prior consent from Camden City Council

A Section 61 agreement has been entered with the Camden Council Environmental Team and this will incorporate reduced working hours for “noisy” works on a 2 hour on 2 hours off basis in line with their recommendations and current practices. This will allow for quiet periods between 10am - 12pm and 14.00pm – 16.00pm.

Saturday works 08:00 to 13:00 – No “noisy” works i.e. Percussive breaking, piling and earth works removal

No work will be carried out outside of these times or on Sundays or Public holidays without written consent. Best practical means to reduce noise will be implemented at all times.

It is possible that an extension to working hours could be applied for under the new guidance following COVID-19 disruption. This would require submission of details to Camden Council to ensure that amenity was preserved and the requested works are viable and require extended hours.

# Community Liaison

A neighbourhood consultation process must have been undertaken prior to submission of the CMP first draft.

This consultation must relate to construction impacts, and should take place following the granting of planning permission in the lead up to the submission of the CMP. A consultation process specifically relating to construction impacts must take place regardless of any prior consultations relating to planning matters. This consultation must include all of those individuals that stand to be affected by the proposed construction works. These individuals should be provided with a copy of the draft CMP, or a link to an online document. They should be given adequate time with which to respond to the draft CMP, and any subsequent amended drafts. Contact details which include a phone number and email address of the site manager should also be provided.

Significant time savings can be made by running an effective neighbourhood consultation process. This must be undertaken in the spirit of cooperation rather than one that is dictatorial and unsympathetic to the wellbeing of local residents and businesses.

These are most effective when initiated as early as possible and conducted in a manner that involves the local community. Involving locals in the discussion and decision making process helps with their understanding of what is being proposed in terms of the development process. **The consultation and discussion process should have already started, with the results incorporated into the CMP first draft submitted to the Council for discussion and sign off.** This communication should then be ongoing during the works, with neighbours and any community liaison groups being regularly updated with programmed works and any changes that may occur due to unforeseen circumstances through newsletters, emails and meetings.

Please note that for larger sites, details of a construction working group may be required as a separate S106 obligation. If this is necessary, it will be set out in the S106 Agreement as a separate requirement on the developer.

---

## Cumulative impact

Sites located within high concentrations of construction activity that will attract large numbers of vehicle movements and/or generate significant sustained noise levels should consider establishing contact with other sites in the vicinity in order to manage these impacts.

**The Council can advise on this if necessary.**

## **10. Sensitive/affected receptors**

Please identify the nearest potential receptors (dwellings, business, etc.) likely to be affected by the activities on site (i.e. noise, vibration, dust, fumes, lighting etc.).

CITY LIT – Adult Education Centre. 1-10 Keeley Street, WC2B 4BA

Peabody Residential properties – Wild Street

Soho Coffee Shop – Kingsway/Keeley St

Paul Smith HO, Kemble Street

65 Kingsway (currently undergoing redevelopment), see para. 14. below

41 Kingsway (currently undergoing redevelopment) , see para. 14. below

## **11. Consultation**

The Council expects meaningful consultation. For large sites, this may mean two or more meetings with local residents **prior to submission of the first draft Construction Management Plan (CMP)**.

Evidence of who was consulted, how the consultation was conducted and a summary of the comments received in response to the consultation should be included. Details of meetings including minutes, lists of attendees etc. should be appended.

In response to the comments received, the CMP should then be amended where appropriate and, where not appropriate, a reason given. The revised CMP should also include a list of all the comments received. Developers are advised to check proposed approaches to consultation with the Council before carrying them out. If your site is on the boundary between boroughs then we would recommend contacting the relevant neighbouring planning authority.

Please provide details of consultation of draft CMP with local residents, businesses, local groups (e.g. residents/tenants and business associations) and Ward Councillors.

Past consultation

- Prior to last year's planning application a thorough public consultation exercise was led by London Communications Agency (LCA) which is summarised by The Statement of Community Involvement report submitted alongside original application. LCA will continue to lead the consultation process with local stakeholders throughout the construction phase. Invitations issued to neighbours & Camden Ward Councilors of the site to participate in project Community Working Group (CWG)
- Inaugural CWG meeting 1<sup>st</sup> July 2020
- The consultation strategy agreed with Camden Council for the CWG and Construction Management Plan (CMP)
- Meeting with neighbouring Peabody Estate took place in February 2020. Margaret Houston, who attended this meeting, has since come forward as representative to attend CWG meetings on behalf of the neighbouring Peabody Estate on Wild Street
- The Resident Site Environmental Management Plan (SEMP) and CMP were issued to residents for consultation on end June '20

See **Appendix B** for CMP neighbourhood consultation summary

## 12. Construction Working Group

For particularly sensitive/contentious sites, or sites located in areas where there are high levels of construction activity, it may be necessary to set up a construction working group.

If so, please provide details of the group that will be set up, the contact details of the person responsible for community liaison and how this will be advertised to the local community, and how the community will be updated on the upcoming works i.e. in the form of a newsletter/letter drop, or weekly drop in sessions for residents.

We have established a Space House Community Working Group. The first meeting took place on 1 July 2020.

Liaison will be the responsibility of London Communications, Cherrie O'Kane (Erith Liaison Manager) and Paul Millar (Senior Project Manager).

The Liaison Group will hold regular public meetings and make the surrounding area aware of all upcoming works and progress via email, notice boards and letter drops.

Erith's Neighbourhood Liaison Plan can be found in **Appendix C**

### 13. Schemes

Please provide details of your Considerate Constructors Scheme (CCS) registration. Please note that Camden requires [enhanced CCS registration](#) that includes CLOCS monitoring. Please provide a CCS registration number that is specific to the above site.

Contractors will also be required to follow the [Guide for Contractors Working in Camden](#). Please confirm that you have read and understood this, and that you agree to abide by it.

Site ID:	121273
Senior Project Manager:	Mr Paul Millar
Site Number:	07584 233922
Senior Project Manager Mobile:	07584 233922
Senior Project Manager email:	<a href="mailto:paul.millar@erith.com">paul.millar@erith.com</a>
Site Address:	Erith Contractors Ltd Space House 1 Kemble Street Holborn London WC2B 4AN
Current Registration Completion Date: (of this phase)	31/12/2020
Overall Completion Date:	22/02/2021
Registration type:	Annual Registration

Erith Contractors LTD have read 'Guide for Contractors working in Camden' document and fully understand requirements and expectations set out within.

## 14. Neighbouring sites

Please provide a plan of existing or anticipated construction sites in the local area and please state how your CMP takes into consideration and mitigates the cumulative impacts of construction in the vicinity of the site. The council can advise on this if necessary.

Two developments are active in close proximity to the site. These are:

- 65 Kingsway, the Clearbell development (Adam Wlodarczyk-Black [AdamWB@clearbell.com](mailto:AdamWB@clearbell.com))
- Princes House, 41 Kingsway, which is a hotel development (contact Katie Coulson [k.coulson@gardiner.com](mailto:k.coulson@gardiner.com))

We have already made contact, and continue to liaise with both Clearbell and Savills site management.

Other local developments

- London College of Surgeons (Kingsway)

We have also looked to identified other large-scale projects in a broader search to evaluate any potential impact to the surrounding area. These can be found in **Appendix D**

# Transport

**This section must be completed in conjunction with your principal contractor. If one is not yet assigned, please leave the relevant sections blank until such time when one has been appointed.**

Camden is a CLOCS Champion, and is committed to maximising road safety for Vulnerable Road Users (VRUs) as well as minimising negative environmental impacts created by motorised road traffic. As such, all vehicles and their drivers servicing construction sites within the borough are bound by the conditions laid out in the CLOCS Standard.

This section requires details of the way in which you intend to manage traffic servicing your site, including your road safety obligations with regard to VRU safety. It is your responsibility to ensure that your principal contractor is fully compliant with the terms laid out in the CLOCS Standard. It is your principal contractor's responsibility to ensure that all contractors and sub-contractors attending site are compliant with the terms laid out in the CLOCS Standard.

Checks of the proposed measures will be carried out by CCS monitors as part of your enhanced CCS site registration, and possibly council officers, to ensure compliance. Please refer to the CLOCS Standard when completing this section.

Please contact [CLOCS@camden.gov.uk](mailto:CLOCS@camden.gov.uk) for further advice or guidance on any aspect of this section.

## CLOCS Contractual Considerations

15. Name of Principal contractor:

Erith Contractors LTD

16. Please submit the proposed method for checking operational, vehicle and driver compliance with the CLOCS Standard throughout the duration of the contract (please refer to our [CLOCS Overview document](#) and [Q18 example response](#)).

### ***Erith***

All Erith transport is a minimum FORS Silver accredited

### ***Contracts/Contractor's***

FORS Bronze accreditation as a minimum will be a contractual requirement, FORS Silver or Gold operators will be appointed where possible. Where FORS Bronze operators are appointed, written assurance will be sought from contractors that all vehicles over 3.5t are equipped with additional safety equipment (as per CLOCS Standard P13), and that all drivers servicing the site will have undertaken approved additional training (eg. Work Related Road Risk Vulnerable Road User training + on-cycle hazard awareness course + 1 x e-learning module etc.). CLOCS Compliance will be included as a contractual requirement.

### ***Desktop checks***

Desktop checks will be made against the FORS database of trained drivers and accredited companies as outlined in the CLOCS Standard Managing Supplier Compliance guide. These will be carried out as per a risk scale based on that outlined in the CLOCS Managing Supplier Compliance guide.

### ***Site checks***

Checks of FORS ID numbers will form part of the periodic checks and will be carried out as per an appropriate risk scale.

17. Please confirm that you as the client/developer and your principal contractor have read and understood the CLOCS Standard and included it in your contracts.

I confirm that I have included the requirement to abide by the CLOCS Standard in my contracts to my contractors and suppliers:

I confirm that we, Erith Contractors, as the principal contractor, have read and understood the CLOCS Standard and will include it in our subcontracts.

Please contact [CLOCS@camden.gov.uk](mailto:CLOCS@camden.gov.uk) for further advice or guidance on any aspect of this section.

## Site Traffic

Sections below shown in blue directly reference the CLOCS Standard requirements. The CLOCS Standard should be read in conjunction with this section.

**18. Traffic routing:** *“Clients shall ensure that a suitable, risk assessed vehicle route to the site is specified and that the route is communicated to all contractors and drivers. Clients shall make contractors and any other service suppliers aware that they are to use these routes at all times unless unavoidable diversions occur.” (P19, 3.4.5)*

Routes should be carefully considered and risk assessed, taking into account the need to avoid where possible any major cycle routes and trip generators such as schools, offices, stations, public buildings, museums etc.

Consideration should also be given to weight restrictions, low bridges and cumulative impacts of construction (including neighbouring construction sites) on the public highway network. The route(s) to and from the site should be suitable for the size of vehicles that are to be used.

Please show vehicle approach and departure routes between the site and the Transport for London Road Network (TLRN). Please note that routes may differ for articulated and rigid HGVs.

Routes should be shown clearly on a map, with approach and departure routes clearly marked. If this is attached, use the following space to reference its location in the appendices.

See **Appendix E** – Traffic Management Plan (TMP)

b. Please confirm how contractors and delivery companies will be made aware of the route (to and from the site) and of any on-site restrictions, prior to undertaking journeys.

The TMP and site delivery booking form will be issued to all subcontractors and suppliers prior to start on site. These will detail the routes to take and site restrictions.

Each contractor/supplier will confirm receipt of these documents and that they have been briefed out to the relevant persons/drivers.

**19. Control of site traffic, particularly at peak hours:** *“Clients shall consider other options to plan and control vehicles and reduce peak hour deliveries” (P20, 3.4.6)*

Construction vehicle movements should be restricted to the hours of 9.30am to 4.30pm on weekdays and between 8.00am and 1.00pm on Saturdays. If there is a school in the vicinity of the site or on the proposed access and/or egress routes, then deliveries must be restricted to the hours of 9.30am and 3pm on weekdays during term time.

Vehicles may be permitted to arrive at site at 8.00am if they can be accommodated on site. Where this is the case they must then wait with their engines switched off.

A delivery plan should ensure that deliveries arrive at the correct part of site at the correct time. Instructions explaining such a plan should be sent to all suppliers and contractors.

Please provide details of the types of vehicles required to service the site and the approximate number of deliveries per day for each vehicle type during the various phases of the project.

For Example:

32t Tipper: 10 deliveries/day during first 4 weeks

Skip loader: 2 deliveries/week during first 10 weeks

Artic: plant and tower crane delivery at start of project, 1 delivery/day during main construction phase project

18t flatbed: 2 deliveries/week for duration of project

3.5t van: 2 deliveries/day for duration of project

Week Number	Description	To/ From site	Quantity Loads/ lorry	Maximum Vehicles per day
1-2	Site set up materials	To	8	2
3-26	Soft strip	From	120	5
3-20	Asbestos removal	From	20	2
8-22	Structural openings	From	30	4
22-33	Slab removal L17,16 and 15	From	50	6
8-20	Steel propping	To	10	1
2-25	Scaffold Deliveries	To	50	2

b. Cumulative effects of construction traffic servicing multiple sites should be minimised where possible. Please provide details of other developments in the local area or on the route that might require deliveries coordination between two or more sites. This is particularly relevant for sites in very constrained locations.

Two developments are active in close proximity to the site. These are:

- 65 Kingsway, the Clearbell development (contact Nick Berry [nick@clearbell.com](mailto:nick@clearbell.com))
- Princes House, 41 Kingsway, which is a hotel development (contact Joe Haines [jhaines@savills.com](mailto:jhaines@savills.com))

Upcoming local developments

- London College of Surgeons (Kingsway)

We have also looked to identified other large scale projects in a broader search to evaluate any potential impact to the surrounding area. These can be found in **Appendix D**

The Cumulative Impact Assessment has been completed and can be found in Appendix K

c. Please provide swept path analyses for constrained manoeuvres along the proposed route.

Swept Path Analysis for all access and egress have been completed. These are in **Appendix B** of the Traffic Management Plan (TMP)

d. Consideration should be given to the location of any necessary holding areas/waiting points for sites that can only accommodate one vehicle at a time/sites that are expected to receive large numbers of deliveries. Vehicles must not queue or circulate on the public highway. Whilst deliveries should be given set times to arrive, dwell and depart, no undue time pressures should be placed upon the driver at any time.

Please identify the locations of any off-site holding areas or waiting points. This can be a section of single yellow line that will allow the vehicle to wait to phone the site to check that the delivery can be accommodated.

Please refer to question 24 if any parking bay suspensions will be required to provide a holding area.

Not required. We will not be having a large number of vehicles.

There are no current plans for an off-site holding area or waiting point.

e. Delivery numbers should be minimised where possible. Please investigate the use of construction material consolidation centres, and/or delivery by water/rail if appropriate.

Any material that is to be retained for future reinstatement into the building will be held on site where possible.

f. Emissions from engine idling should be minimised where possible. Please provide details of measures that will be taken to reduce delivery vehicle engine idling, both on and off site (this does not apply to concrete mixers).

The delivery booking form that will be briefed to all drivers clearly states our no idling policy. This will also be enforced by our trained traffic management team and dedicated marshals

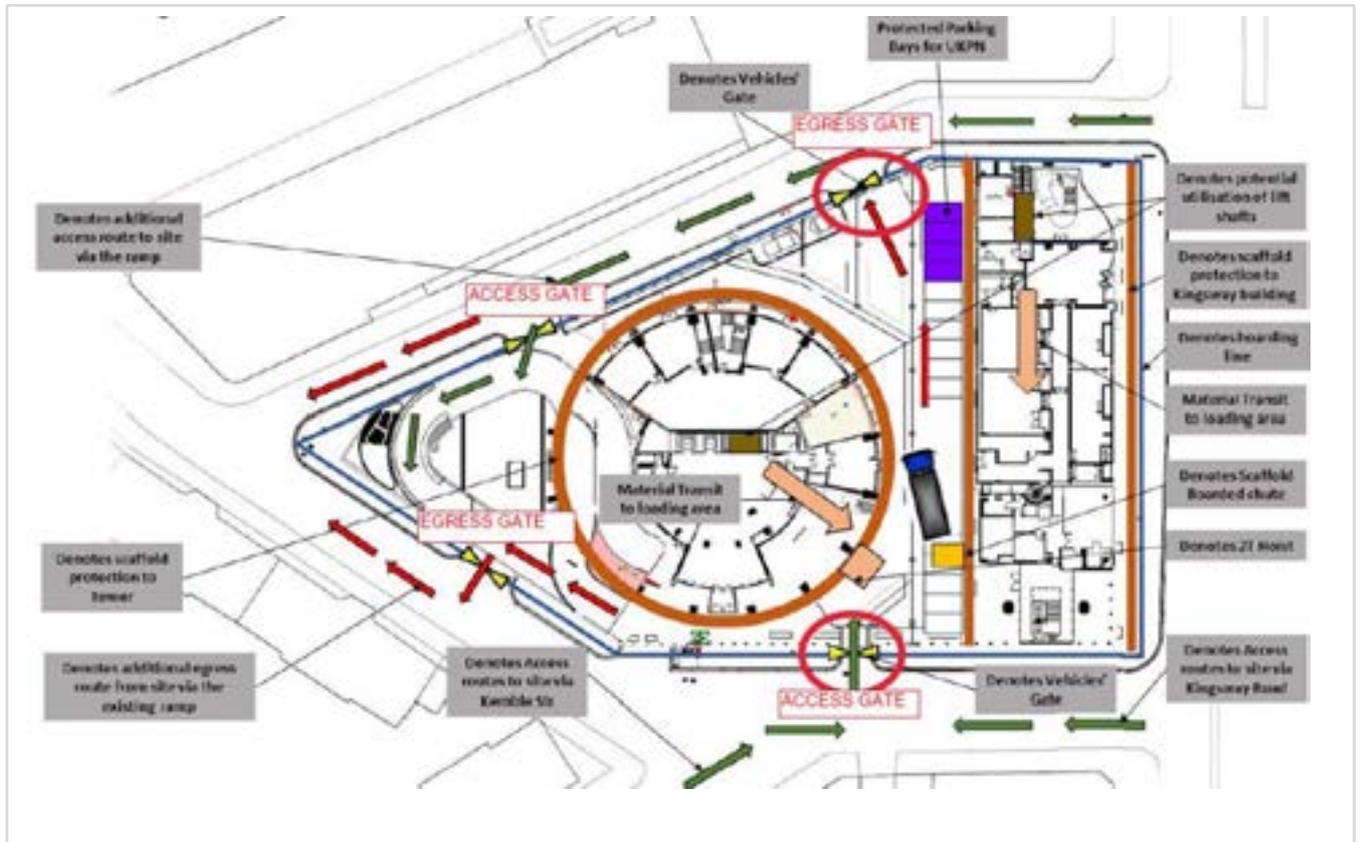
**20. Site access and egress:** *“Clients shall ensure that access to and egress from the site is appropriately managed, clearly marked, understood and clear of obstacles.”* (P18, 3.4.3)

This section is only relevant where vehicles will be entering the site. Where vehicles are to load from the highway, please skip this section and refer to Q23.

Vehicles entering and leaving the site should be carefully managed, using gates that are clearly marked and free from obstacles. Traffic marshals must ensure the safe passage of all traffic on the public highway, in particular pedestrians and cyclists, when vehicles are entering and leaving site, particularly if reversing.

Traffic marshals, or site staff acting as traffic marshals, should hold the relevant qualifications required for directing large vehicles when reversing. Marshals should be equipped with ‘STOP – WORKS’ signs (not STOP/GO signs) if control of traffic on the public highway is required. Marshals should have radio contact with one another where necessary.

a. Please detail the proposed site access and egress points on a map or diagram. If this is attached, use the following space to reference its location in the appendices.



b. Please describe how the access and egress arrangements for construction vehicles in and out of the site will be managed, including the number and location of traffic marshals where applicable. If this is shown in an attached drawing, use the following space to reference its location in the appendices.

See Appendix E - Traffic Management Plan (TMP)

c. Please provide swept path drawings for vehicles accessing/egressing the site if necessary. If these are attached, use the following space to reference their location in the appendices.

Swept Path Analysis for all access and egress have been completed. These are in **Appendix B** of the Traffic Management Plan (TMP)

d. Provision of wheel washing facilities should be considered if necessary. If so, please provide details of how this will be managed, and any run-off controlled. Please note that wheel washing should only be used where strictly necessary, and that a clean, stable surface for loading should be used where possible.

Wheel washing will not be required as the site provides an existing hard standing that will remain during this phase of the project.

Minimal demolition and no excavation works associated with the approved development will allow vehicles to transit through site on a clean surface.

**21. Vehicle loading and unloading:** *“Clients shall ensure that vehicles are loaded and unloaded on-site as far as is practicable.” (P19, 3.4.4)*

This section is only relevant if loading/unloading is due to take place off-site on the public highway. If loading is taking place on site, please skip this section.

a. please provide details of the parking and loading arrangements for construction vehicles with regards to servicing and deliveries associated with the site (e.g. delivery of materials and plant, removal of excavated material). This is required as a scaled site plan, showing all points of access and where materials, skips and plant will be stored, and how vehicles will access and egress the site. If this is attached, use the following space to reference its

location in the appendices. Please outline in question 24 if any parking bay suspensions will be required.

All loading activities will be within the site boundary.

b. Where necessary, Traffic Marshalls must ensure the safe passage of pedestrians, cyclists and motor traffic in the street when vehicles are being loaded or unloaded. Please provide detail of the way in which marshals will assist with this process, if this differs from detail provided in Q20 b.

As above therefore there will be no conflict between pedestrians, cyclists and motor traffic when vehicles are loading/unloading

See Appendix E – Traffic Management Plan for further details

# Street Works

Full justification must be provided for proposed use of the public highway to facilitate works. Camden expects all options to minimise the impact on the public highway to have been fully considered prior to the submission of any proposal to occupy the highway for vehicle pit lanes, materials unloading/crane pick points, site welfare etc.

Please note that Temporary Traffic Orders (TTOs) and hoarding/scaffolding licenses may be applied for prior to CMP submission but won't be granted until the CMP is signed-off.

Please note that there is a two week period required for the statutory consultation process to take place as part of a TTO.

If the site is on or adjacent to the TLRN, please provide details of preliminary discussions with Transport for London in the relevant sections below.

If the site conflicts with a bus lane or bus stop, please provide details of preliminary discussions with Transport for London in the relevant sections below.

## 22. Site set-up

Please provide a scaled plan detailing the local highway network layout in the vicinity of the site. This should include details of on-street parking bay locations, cycle lanes, footway extents, relevant street furniture, and proposed site access locations. If these are attached, use the following space to reference their location in the appendices.

See **Appendix E** - Traffic Management Plan (TMP)

## 23. Parking bay suspensions and temporary traffic orders

Parking bay suspensions should only be requested where absolutely necessary and these are permitted for a maximum of 6 months only. For exclusive access longer than 6 months, you will be required to obtain a [Temporary Traffic Order \(TTO\)](#) for which there is a separate cost.

Please provide details of any proposed parking bay suspensions and/or TTO's which would be required to facilitate the construction - include details of the expected duration in

months/weeks. Building materials and equipment must not cause obstructions on the highway as per your CCS obligations unless the requisite permissions are secured.

Information regarding parking suspensions can be found [here](#).

Tower crane erection may require a temporary road closure during erection and dismantle. This would be for a mobile crane/delivery area for tower crane components.

Duration of the works would be two days, with Saturday and Sunday suggested for minimal impact on the road network. The tower crane would be erected in 2nd quarter of the construction programme and dismantled at the end of our works.

There are currently no other planned activities that would require a road closure.

#### **24. Occupation of the public highway**

Please note that use of the public highway for storage, site accommodation or welfare facilities is at the discretion of the Council and is generally not permitted. If you propose such use you must supply full justification, setting out why it is impossible to allocate space on-site. We prefer not to close footways but if this is unavoidable, you should submit a scaled plan of the proposed diversion route showing key dimensions.

a. Please provide justification of proposed occupation of the public highway.

Working in conjunction with Camden hoarding lines and remaining footpath widths have been agreed. A layout of this can be found in Appendix H

b. Please provide accurate scaled drawings of any highway works necessary to enable construction to take place (e.g. construction of temporary vehicular accesses, removal of street furniture etc). If these are attached, use the following space to reference their location in the appendices.

As above

## **25. Motor vehicle and/or cyclist diversions**

Where applicable, please supply details of any diversion, disruption or other anticipated use of the public highway during the construction period. Please show locations of diversion signs on drawings or diagrams. If these are attached, use the following space to reference their location in the appendices.

Road suspension may be required for Tower Crane erection. Location to be confirmed at a later date. A specialist traffic management company will be employed to design and manage the closure if it is needed.

All relevant licenses and permits will be applied for, and received, from Camden Council before works will start

## **26. Scaffolding, hoarding, and associated pedestrian diversions**

Pedestrians safety must be maintained if diversions are put in place. Vulnerable footway users should also be considered. These include wheelchair users, the elderly, those with walking difficulties, young children, those with prams, the blind and partially sighted. Appropriate ramps must be used if cables, hoses, etc. are run across the footway.

Any work above ground floor level may require a covered walkway adjacent to the site. A licence must be obtained for scaffolding and gantries. The adjoining public highway must be kept clean and free from obstructions, and hoarding should not restrict access to adjoining properties, including fire escape routes. Lighting and signage should be used on temporary structures/skips/hoardings etc.

A secure hoarding will generally be required at the site boundary with a lockable access.

a. Where applicable, please provide details of any hoarding and/or scaffolding that intrudes onto the public highway, describing how pedestrian safety will be maintained through the diversion, including any proposed alternative routes. Please provide detailed, scale drawings that show hoarding lines, gantries, crane locations, scaffolding, pedestrian routes, parking bay suspensions, remaining road width for vehicle movements, temporary vehicular accesses, ramps, barriers, signage, lighting etc. If these are attached, use the following space to reference their location in the appendices.

All hoarding and scaffold will be within or at the site boundary.

No pedestrian diversions are envisaged.

See **Appendix H** for scaled hoarding line drawing

b. Please provide details of any other temporary structures which would overhang/oversail the public highway (e.g. scaffolding, gantries, cranes etc.) If these are attached, use the following space to reference their location in the appendices.

None

## 27. Services

Please indicate if any changes to services are proposed to be carried out that would be linked to the site during the works (i.e. connections to public utilities and/or statutory undertakers' plant). Larger developments may require new utility services. If so, a strategy and programme for coordinating the connection of services will be required. If new utility services are required, please confirm which utility companies have been contacted (e.g. Thames Water, National Grid, EDF Energy, BT etc.) You must explore options for the utility companies to share the same excavations and traffic management proposals. Please supply details of your discussions.

No new services required. For this phase of the project all services will be terminated at the entrance point within the buildings.



# Environment

To answer these sections please refer to the relevant sections of **Camden's Minimum Requirements for Building Construction (CMRBC)**.

28. Please list all [noisy operations](#) and the construction method used, and provide details of the times that each of these are due to be carried out.

Creating structural openings through existing floors

- Saw cutting, Brokk/8t excavator with hammer attachment

Removal of 17, 16 and 15<sup>th</sup> floors

- Brokk/8/13t excavator with hammer attachment

All the above will only take place Monday - Friday between 08:00 – 10:00. 12:00-14:00, 16:00-1800.

29. Please confirm when the most recent noise survey was carried out (before any works were carried out) and provide a copy. If a noise survey has not taken place please indicate the date (before any works are being carried out) that the noise survey will be taking place, and agree to provide a copy.

See NDV plan in **Appendix F**

Base line environmental monitoring has taken place with report and noise predictions and mitigation measures to follow.

30. Please provide predictions for [noise](#) and vibration levels throughout the proposed works.

See Noise Dust Vibration Plan (NDV) in **Appendix F**

31. Please provide details describing mitigation measures to be incorporated during the construction/[demolition](#) works to prevent noise and vibration disturbances from the activities on the site, including the actions to be taken in cases where these exceed the predicted levels.

The latest/best machinery and tools will be used for all demolition works to minimise noise and vibration.

Noise, Dust and Vibration monitors will be installed on each elevation. These will be real time monitoring with text and email alerts sent if amber or red levels are breached. When an alert is received the works will cease and the situation/methods will be reviewed. Only upon implementation of additional controls or method change can the works continue.

32. Please provide evidence that staff have been trained on BS 5228:2009

Our NDV records and reports are provided by fully accredited organisations.

See **Appendix F** for further information

33. Please provide details on how dust nuisance arising from dusty activities, on site, will be prevented.

Both buildings will be fully encapsulated with monarflexed scaffold before demolition works start.

Direct water suppression, using hose pipes and extinguishers as a backup, will be used for all demolition works.

If required, the transit route for all on site vehicles will be regularly “damped down” to minimise airborne dust.

Dust levels will be real time monitored and works will stop for review should amber or red levels be breached. If levels remain high due to dry weather/wind, we will install “water misters” around the site.

34. Please provide details describing how any significant amounts of dirt or dust that may be spread onto the public highway will be prevented and/or cleaned.

The project should remain relatively “clean” due the minimal amount of demolition and because there is no excavation to take place.

The on-site transit routes will be regularly “damped down” to control dust from vehicle movements.

If for any reason dirt leaves site and gets on to the highway a road sweeper will be deployed immediately to clean the road.

35. Please provide details describing arrangements for monitoring of [noise](#), vibration and dust levels.

See Environmental Management (EMP) and Noise, Dust, Vibration Plans (NDV) in Appendix

36. Please confirm that a Risk Assessment has been undertaken at planning application stage in line with the GLA policy. [The Control of Dust and Emissions During Demolition and Construction 2104 \(SPG\)](#), that the risk level that has been identified, and that the appropriate measures within the GLA mitigation measures checklist have been applied. Please attach the risk assessment and mitigation checklist as an appendix.

An Air Quality Assessment (AQA) was submitted with the planning application and subsequently approved subject to condition (PP Condition 16)

The AQA can be found in **Appendix J**

37. Please confirm that all of the GLA's 'highly recommended' measures from the [SPG](#) document relative to the level of risk identified in question 36 have been addressed by completing the [GLA mitigation measures checklist](#).

See Air Quality Assessment (AQA) in **Appendix J**

- 38. If the site is a 'High Risk Site', 4 real time dust monitors will be required. If the site is a 'Medium Risk Site', 2 real time dust monitors will be required. The risk assessment must take account of proximity to sensitive receptors (e.g. schools, care homes etc), as detailed in the [SPG](#). Please confirm the location, number and specification of the monitors in line with the SPG and confirm that these will be installed 3 months prior to the commencement of works, and that real time data and quarterly reports will be provided to the Council detailing any exceedances of the threshold and measures that were implemented to address these.

Hilson Moran were commissioned to undertake an air quality assessment and respond to the requirements of Condition 16 of planning permission reference 2019/2773/P, dated 26<sup>th</sup> November 2019, for the refurbishment and extension of 1 Kemble Street, London. This report addresses the potential air quality impacts during both the construction and operational stages of the Approved Development and responds to each part of Condition 16 of the planning permission

The qualitative assessment of the construction phase impacts stated:

There is a low risk of dust soiling and a negligible risk of fugitive PM<sub>10</sub> emissions during demolition, earthworks, construction and trackout. As the construction related dust risk is low to negligible, parts c), d) and e) of planning condition no. 16 are not required.

Nevertheless, through good site practice and the implementation of standard mitigation measures in line with best practice guidance, the impact of dust and PM<sub>10</sub> releases will be minimised. Although not required, the contractor has confirmed that real time dust monitoring will be installed on the Application Site. The residual effect of the construction phase on air quality is therefore not significant.

Also see the Environmental Management Plan (EMP) in **Appendix F** for further mitigation measures.

39. Please provide details about how rodents, including [rats](#), will be prevented from spreading out from the site. You are required to provide information about site inspections carried out and present copies of receipts (if work undertaken).

The existing maintenance team on site have stated that there are no inherent problems with vermin on the site.

40. Please confirm when an asbestos survey was carried out at the site and include the key findings.

Asbestos Refurbishment Survey – Exterior of the Tower, Kingsway and Link Structures – 03.02.2020

Asbestos Refurbishment Survey – Lift Shafts to Tower & Kingsway – 13.02.2020

Asbestos Refurbishment Survey – Window Removal to Tower and Kingsway (Link Bridge) – 09.03.2020

Asbestos Refurbishment Survey – 5th Floor to Ground Floor (Kingsway) – 14th to 29.01.2020

Asbestos Refurbishment Survey – 11th Floor to Basement – 14th Jan to 5th Feb 2020

Asbestos Refurbishment Survey – Roof to 6th Floor (Kingsway) – 19th Dec 2019 to 7th Jan 2020

Asbestos Refurbishment Survey – Roof to 12th Floor(Tower) – 06-13.01.2020

Asbestos Refurbishment Survey – Initial Survey – 19.12.2019

**Key Findings – Asbestos to be removed**

Location No.	Location Name	Sample No.	Item / Position	Material
001	Kemble Street Staircase (Kingsway)	P-356976/002	Step nosings	Asbestos thermoplastic material
001	Kemble Street Staircase (Kingsway)	P-356976/003	Floor tiles (grey) & bitumen adhesive	Asbestos thermoplastic/adhesive
002	Kemble Street Lobby (Kingsway)	P-356976/004	Adhesive residue beneath carpet tiles	Asbestos bitumen
003	Open Plan Area (Kingsway)	P-356976/005	Ceiling above MMMF tiles	Asbestos insulating board
003	Open Plan Area (Kingsway)	P-356976/007	Window sills	Asbestos cement
003	Open Plan Area (Kingsway)	P-356976/008	Window sills	Asbestos thermoplastic/adhesive
003	Open Plan Area (Kingsway)	P-356976/As 004	Adhesive residue partially beneath floor screed	Asbestos bitumen
003	Open Plan Area (Kingsway)	P-356976/010	Wall lining beneath plasterboard lining	Asbestos insulating board
005	Kitchen (Kingsway)	P-356976/As 007	Window sills	Asbestos cement
005	Kitchen (Kingsway)	P-356976/As 004	Adhesive residue partially beneath modern linoleum	Asbestos bitumen
005	Kitchen (Kingsway)	P-356976/As 010	Wall lining	Asbestos insulating board

41. Complaints often arise from the conduct of builders in an area. Please confirm steps being taken to minimise this e.g. provision of a suitable smoking area, tackling bad language and unnecessary shouting.

Erith's Conduct Manager will be on site during the initial set up/start of the project to implement and enforce correct behaviour of all operatives. The site will then be closely monitored with regular visits.

The enclosed smoking/vaping areas provided will face inward to site to reduce visibility/reduce likelihood of interaction with the public.

Also reference Neighbourhood Liaison Strategy in **Appendix C**

42. If you will be using non-road mobile machinery (NRMM) on site with net power between 37kW and 560kW it will be required to meet the standards set out below. The standards are applicable to both variable and constant speed engines and apply for both PM and NOx emissions.

#### **From 1<sup>st</sup> September 2015**

**(i) Major Development Sites** – NRMM used on the site of any major development will be required to meet Stage IIIA of EU Directive 97/68/EC

**(ii) Any development site within the Central Activity Zone** - NRMM used on any site within the Central Activity Zone will be required to meet Stage IIIB of EU Directive 97/68/EC

#### **From 1<sup>st</sup> September 2020**

**(iii) Any development site** - NRMM used on any site within Greater London will be required to meet Stage IIIB of EU Directive 97/68/EC

**(iv) Any development site within the Central Activity Zone** - NRMM used on any site within the Central Activity Zone will be required to meet Stage IV of EU Directive 97/68/EC

Please provide evidence demonstrating the above requirements will be met by answering the following questions:

- a) Construction time period **(07/20 - 03/21)**
- b) Is the development within the CAZ? (Y/N): **Y**
- c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N): **Y**
- d) Please provide evidence to demonstrate that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered:  
**Site registered under "Space House"**  
**See Appendix G for evidence of NRMM compliance/procedures**
- e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection:  
**Confirmed**
- f) Please confirm that records will be kept on site which details proof of emission limits, including legible photographs of individual engine plates for all equipment, and that this documentation will be made available to local authority officers as required:  
**Confirmed**

• SYMBOL IS FOR INTERNAL USE

# Agreement

The agreed contents of this Construction Management Plan must be complied with unless otherwise agreed in writing by the Council. This may require the CMP to be revised by the Developer and reapproved by the Council. The project manager shall work with the Council to review this Construction Management Plan if problems arise in relation to the construction of the development. Any future revised plan must be approved by the Council in writing and complied with thereafter.

It should be noted that any agreed Construction Management Plan does not prejudice further agreements that may be required such as road closures or hoarding licences.



**Signed:** .....

**Date:** 28.06.20.....

**Print Name:** PAUL MILLAR .....

**Position:** Senior Project Manager.....

Please submit to: [planningobligations@camden.gov.uk](mailto:planningobligations@camden.gov.uk)

End of form.

## **APPENDICES**

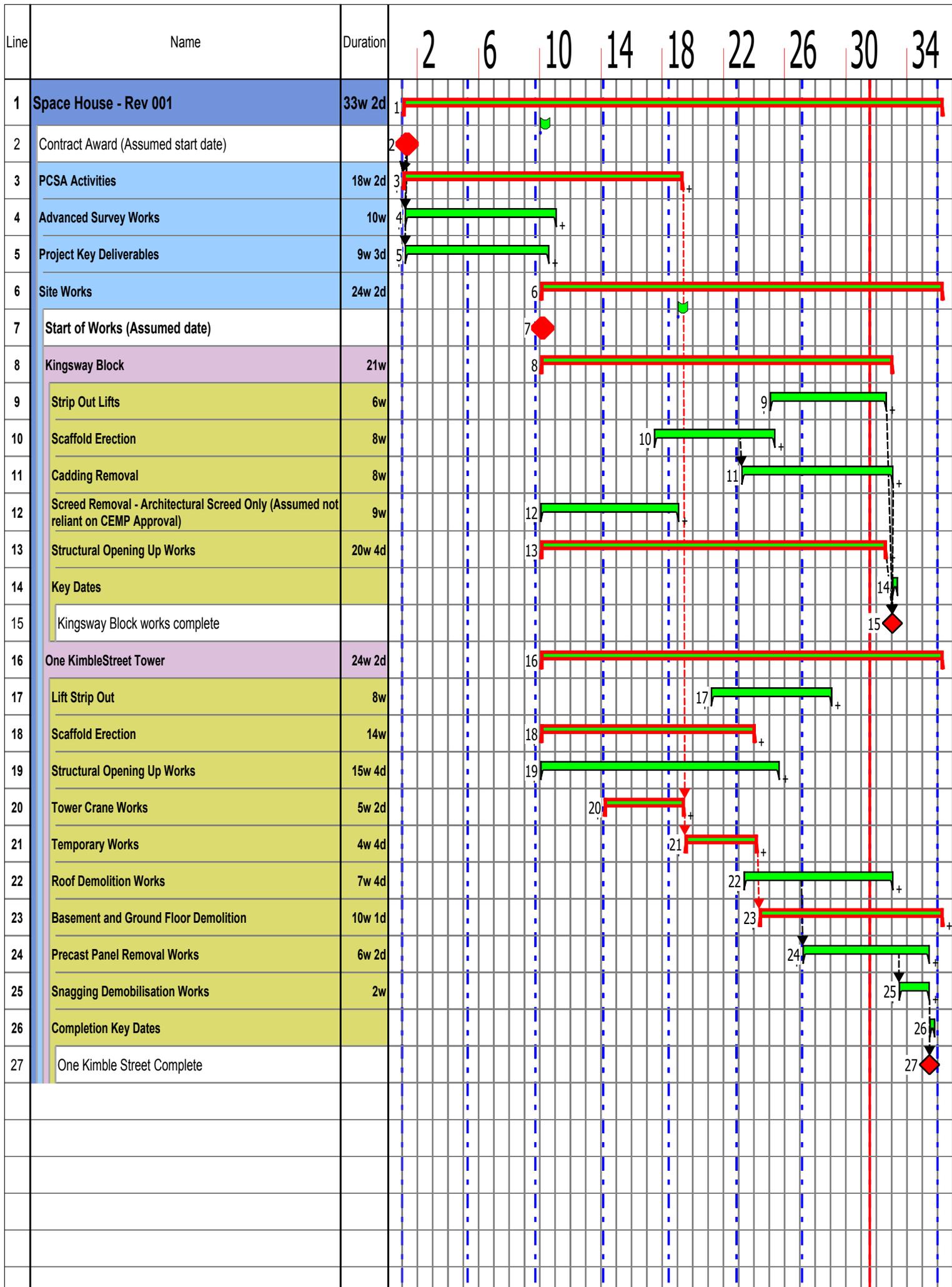
<b>Appendix A:</b>	<b>Programme of Works</b>
<b>Appendix B:</b>	<b>Details of CMP Communication/Consultation with neighbours</b>
<b>Appendix C:</b>	<b>Neighbourhood Liaison Plan</b>
<b>Appendix D:</b>	<b>Surrounding Projects/Schemes</b>
<b>Appendix E:</b>	<b>Traffic Management Plan</b>
<b>Appendix F:</b>	<b>Environmental Management Plan Noise Dust Vibration Monitoring Plan</b>
<b>Appendix G:</b>	<b>NRMM</b>
<b>Appendix H:</b>	<b>Proposed Hoarding Lines</b>
<b>Appendix J:</b>	<b>Air Quality Assessments</b>
<b>Appendix K:</b>	<b>Cumulative Impact Assessment</b>
<b>Appendix L:</b>	<b>Site Environmental Management Plan</b>

Erith Contractors

# Appendix A

Programme of Works





Build Stages  
 Summary
  Key Date



Erith Contractors

# Appendix B

CMP Communication/Consultation with Neighbours



**SEAFORTH – SPACE HOUSE  
CMP CONSULTATION SUMMARY  
28 JULY 2020**

This document provides a summary of the public consultation undertaken on the Construction Management Plan for Space House and captures the feedback received throughout the two-week consultation period (10 July – 24 July 2020), including that from the first Construction Working Group meeting held on Wednesday 1 July.

**1. Consultation strategy**

Given the current circumstances of the Covid-19 pandemic, a virtual and online consultation strategy was developed to communicate the Construction Management Plan (CMP) for the approved refurbishment of Space House to key stakeholders and the neighbours of the site. This included setting out the construction programme on a comprehensive consultation website and issuing a detailed newsletter to the local community.

A broad variety of channels were employed to promote the consultation in order to maximise engagement with local community. The strategy was agreed in discussion with LBC Officers and is detailed below:

- **Consultation newsletter** – The online consultation for the CMP was promoted through a four-page newsletter distributed to 2,349 local households and businesses on Friday 10 July.
  - a. The newsletter provided details of the proposed construction programme and timeline, as well as details on where they can view the CMP and provide their comments with a stated deadline of Sunday 26 July. This allowed the local community over two weeks to provide their feedback on the CMP.
  - b. The newsletter was delivered via Royal Mail system specifically to the residents in the neighbouring Peabody Estate on Wild Street to ensure they received the newsletter. The newsletter was then hand-delivered to the remaining allocated distribution area
  - c. A copy of the newsletter and map showing the distribution area can be found in the Appendices at the end of this document.
- **Stakeholder letters** – Letters outlining the consultation were also sent to a number of key stakeholders including ward councillors for Holborn and Covent Garden, local businesses and community groups notifying them of the CMP consultation. Further detail on stakeholder correspondence can be found below.
- **Website** – The pre-application consultation website was significantly updated – [www.spacehouseproposals.co.uk](http://www.spacehouseproposals.co.uk) – and included detailed information on the construction programme and key details of the CMP along with contact information to submit comments on the CMP. The CMP was made available to download for those who wanted to review it in more detail. This was launched on Friday 10 July, in line with when the local community would receive the hand-delivered newsletter.
- **Feedback mechanisms** – Local stakeholders were encouraged to provide feedback on the CMP consultation through a variety of means; using the Freephone service (0800 307 7965), emailing the consultation address ([spacehouse@londoncommunications.co.uk](mailto:spacehouse@londoncommunications.co.uk)) or using the website's online feedback form.



## Stakeholder correspondence

Letters were issued on 1 May 2020 to key local community groups, businesses, ward councillors and organisations undergoing works at nearby developments inviting them to be a part of the Construction Working Group. A follow-up email was sent on 15 May to those same stakeholders, who had yet to respond, to ask again if they would be interested in being part of the CWG. On 17 June, another email was issued to stakeholders to inform them of the date of the first meeting, two weeks prior to it taking place on Wednesday 1 July.

Prior to the first CWG meeting, a copy of the draft CMP was issued to the CWG members so that they would be able to review this and consider what questions they would like to raise at the meeting.

## **2. Construction Working Group overview**

An online Construction Working Group (CWG) meeting was arranged by the project team for Wednesday 1 July at 6.30pm, for a group of selected representatives of local residents, businesses and nearby developments. This was set up in order to discuss the CMP and provide the opportunity for attendees to put forward any questions they had about the proposed construction programme and its management. The meeting was also arranged as a first in a series of regular CWG meetings which will be held to continue communication with the local community about the construction programme.

A presentation was delivered by the project team, which introduced the core team, including Erith, the demolition contractors, and provided a timeline of the constructions works as well as details of the key aspects of the CMP such as the proposed noisy working hours.

The meeting was attended by representatives from the local community, including resident associations, local businesses and nearby developments in the area. The ward councillors for the area expressed an interest in being part of the CWG but were unable to attend the first meeting.

## **3. Feedback summary**

### **CWG:**

On Wednesday 1 July, the project team held its first CWG meeting, which was held virtually due to Covid-19 and social distancing restrictions. The format of the evening saw introductions from the group's chair and individual members of the project team. The chair then explained the purpose of the first CWG. This was followed by a presentation from the project team on the construction programme, the start of enabling works and the consultation on the draft Construction Management Plan (CMP).

### **Consultation Responses:**

During the two-week consultation period (10 July -24 July 2020), we received four comments from local stakeholders. Of note, two of the correspondences were sent to the consultation email addresses, one through the Freephone service and another stakeholder directly emailed a member of the project team.



**Follow-up meeting:**

After the CWG meeting, a local stakeholder requested a further discussion about the development. A follow-up meeting was therefore organised on Friday 17 July and involved discussions on the following:

**Noise Pollution:**

The stakeholder was concerned that construction works would affect the services they provide for members of the community and more widely across London. They asked for an ongoing dialogue to be established with the project team, in which the two parties can discuss upcoming phases of works and come to a suitable solution that does not negatively affect their business.

**Timings of work:** The stakeholder enquired if construction works could begin in September. They noted their premise was largely empty at present, and as such, their preference was for any ‘noisy works’, particularly grounding, to be conducted sooner.

**Traffic & Access:** The stakeholder referenced their building was in close proximity to the site, near Keeley Street. As such, they sought assurances that any vehicle movements around Keeley Street are minimised, with other access routes being considered.

**Communication:** The stakeholder indicated they would welcome the opportunity to discuss the proposals with the project team independently of the CWG meetings. While they would like to remain as part of the CWG, they stressed that a separate line of communication was necessary, to discuss how the development is to affect their business.

**Feedback:**

In the table below, we have summarised the main points of discussion raised by stakeholders during the consultation period, including in the first CWG meeting and follow-up meeting with a consultee:

ISSUE	POINTS RAISED	RESPONSE
Traffic and movement of construction vehicles	<p>Two stakeholders expressed an interest in receiving further information on the proposed routes that construction vehicles will be using to access the site.</p> <p>One stakeholder noted concerns that utilising Kemble Street as the primary access route to the site could cause traffic to build up on surrounding roads, most notably Wild Street.</p> <p>Another stakeholder stated the development site was in close proximity to their building along Keeley Street. As such, they sought assurances that any vehicle movements in the area would be done under strict safety guidelines, any protect the pedestrian route along the street, which, they commented, was ‘very narrow’.</p>	<p>Following comments on traffic routes, a new route, running in from Kemble Street and out of the site via Keeley Street has been proposed in the revised Traffic Management Plan. This will greatly reduce the amount of construction vehicles passing along local roads.</p> <p>All vehicle loading/unloading activities will be undertaken in the site boundary, to avoid the build-up of traffic along Keeley Street.</p> <p>Video surveillance equipment will be fitted to the hoarding</p>



		line, to ensure any incidents are properly recorded.
Working Hours	<p>One stakeholder stated the proposed working hours between 16:00-18:00 on weekdays is likely to adversely affect local residents in the area. As such, they enquired if it was possible for the project team to by stop 'noisy' construction works at 17:00.</p> <p>A local stakeholder noted the proposed working practise of '2 hours on, 2 hours off' is likely to affect a number of people who use their services. They stated an open line of communication must be maintained throughout the construction phase of works on the development, to assess any possibility of changing working arrangements, as and when required.</p>	<p>The project team said they will commit to the voluntary work practise of '2 hours on, 2 hours off', when conducting any 'noisy works' on site. Other construction works will be taking place in between these hours. Seaforth remains committed to ensuring stakeholders are given advanced notice of construction works, to cause minimal disruptions.</p> <p>In response to questions about the timings of construction works, the project team has informed the relevant consultee that they will not be reducing working hours on the site. They did however state they will work with them, and other stakeholders, to minimise the chances of these works causing disruptions during important events.</p>
Noise and dust Pollution	<p>One stakeholder said they were concerned about the level of noise pollution and dust that will be caused in the local area by construction vehicles, as work on site progresses. As such, they enquired how the Seaforth will monitor these on site moving forward.</p>	<p>Devices measuring noise levels, air quality and vibrations caused by works on site will be fitted across the area. The devices will notify a project team member of any issues immediately, ensuring they are able to address the problem as soon as possible.</p>
Construction Works	<p>A stakeholder enquired if it was possible for the project team to begin construction works over the coming months. They noted most premises are likely to remain empty under the current circumstances and as such, would be a good time for the team to carry out the necessary ground works.</p>	<p>The project team indicated construction is unlikely to begin until the autumn at the earliest and not before all pre-implementation obligations have been discharged, given the CMP will not be submitted to Camden Council until the end of July.</p>

Noise Disturbance	A consultee referenced that a noise disturbance had been causing issues locally for several days. They enquired if the noise was emanating from any works on site.	A member of the project team responded to the consultee, informing them that no construction works had begun on site. As such, they said it was impossible that the noise was emanating from the Space House site. The consultee welcomed the quick response to their query.
Communication	A consultee said they would welcome regular updates on the progression of the development, alongside the monthly CWP meetings. They would like to maintain an ongoing dialogue, to address any concerns they might have and the persons which they represent.	Seaforth said they would be happy to make provisions to meet with the consultee. It was agreed monthly meetings would be held, alongside additional discussions on how the project team can improve engagement with the organisation/community? the stakeholder represents.
s.106 agreement	A stakeholder enquired if it was possible to ascertain information on how the resources generated from the s.106 agreement is to be invested into the local area	A member of the project team responded, stating that, as part of the masterplan, Seaforth will be making an investment in new public realm and provisions to promote sustainable modes of transportation across the site. They informed the stakeholder that further details about how the s.106 contributions will be reinvested in the local area will be available during the upcoming CWG meeting.

#### 4. Next steps

Following the first CWG meeting and submission of the CMP, we intend on taking the following steps:

- Hold our next CWG meeting in August (Wednesday 19 August provisionally) to continue dialogue with CWG members and keep them updated on the status of the CMP.
- Continue liaising with stakeholders and having regular meetings to provide updates on the construction programme and management.
- Issue construction newsletter to all those addresses previously notified with key milestone updates on the construction programme
- Continue to update the website to reflect the latest updates on the construction programme



## 5. Appendices

Newsletter distribution area: 2,349 addresses





Newsletter distributed to 2,349 local addresses

**SEAFORTH LAND**

# SPACE HOUSE

*Community Newsletter*

Issue 1 - July 2020

Welcome to this first in a series of regular newsletters updating the local community on Seaforth Land's plans to sensitively refurbish Space House at One Kemble Street and 43-59 Kingsway in Holborn to provide high quality office space with modern flexible retail space at ground floor level as well as improved public realm.

As you may be aware, the team are preparing to commence construction work in the coming months at this iconic, Grade II listed building.

**In this newsletter, you will find:**

- Information about our plans to refurbish Space House.
- Details on how you can comment on our draft Construction Management Plan (CMP).
- Our outline construction programme and overview of upcoming works.
- Information on how we will keep you regularly informed and ways of getting in touch with us.

You can find further information on our website:  
[spacehouseproposals.co.uk](http://spacehouseproposals.co.uk)



## ABOUT THE SCHEME

Space House is a landmark Grade II listed building set across two interconnected blocks and is well known for its innovative architecture and façade, with a striking grid-like façade made of pre-cast concrete. It was completed in 1968 as an office development and was first occupied in 1975 by the Civil Aviation Authority after being empty for the first seven years.

In November 2019, we obtained planning permission and listed building consent to sensitively refurbish the building and are now preparing to commence the main construction works on-site.

The revitalisation of this landmark building will preserve and enhance this Grade II listed building, allowing people to work and socialise in and around outstanding 20th Century architecture by:

 <p>Cleaning and refurbishing the existing façade.</p>	 <p>Creating modern workspaces through an interior renovation.</p>	 <p>Building two new floors of office accommodation within the tower on Kemble Street to replace the existing rooftop plant.</p>
 <p>Delivering a modest single storey extension to the Kingsway block.</p>	 <p>Breathing much-needed life into an unwelcoming part of London, with new public, flexible retail and event space at basement and ground floor levels.</p>	 <p>Public realm improvements.</p>

## THE TEAM



Seaforth Land is a London based real estate investment company specialising in central London.

This is the company's second project in Camden. We are proud to be delivering a scheme which will significantly improve and revitalise this special building and deliver a number of new employment opportunities and workspaces for the borough.

We are committed to working with the local community on this important project and would be keen to hear of any local initiatives and programmes we may be able to support or partner with.



Erith has been appointed to carry out the enabling & demolition work phases for the site.

The Erith Group is a family run, employee owned trust, founded in 1967 by Tom Darsey. The company has an excellent health and safety record and acknowledged reputation for their good liaison and engagement with the communities they visit. This is at the core of the company's ethos.



Project Manager



Planning Consultant



Architect



Communications Consultant



# CONSTRUCTION MANAGEMENT PLAN

Outline construction programme

• Enabling works (pre-implementation phase)  
July to September 2020



• Start of demolition works  
Autumn 2020



• Main construction works  
Spring 2021 to Autumn 2022

## BEING A CONSIDERATE NEIGHBOUR

We are now consulting with the local community on our draft Construction Management Plan (CMP).

The CMP outlines how we will ensure that the construction works will be managed safely and to the highest standards, minimising noise and disruption to neighbours.

You can download a full copy of our draft CMP by visiting our website

[spacehouseproposals.co.uk](http://spacehouseproposals.co.uk)

## TRAVEL SAFETY

- The primary access route for vehicles is expected to be via Wild Street merging onto Kemble Street.
- All unloading and loading activities will take place on the site. Engines will be turned off immediately once vehicles enter the site.
- Vehicles will then leave the site by following the one-way system on Keeley Street, turning left onto Kemble Street and then finally turning left onto Kingsway. There will be two egress gates, one which exits onto Keeley Street and one that exits onto Kemble Street.
- Traffic marshals will guide vehicles to and from the site.
- No roads will need to close during the duration of the works, except for the erection of a crane during demolition works for two days. This would normally be over a weekend to minimise traffic disruption. Residents will be notified well in advance of this taking place.
- Ensuring pedestrian and cycle safety is maintained around the site during construction is a priority and traffic marshals will be present to manage this.

## COVID-19

Erith are fully committed to keeping their workforce and neighbours safe during this time, with all works following the guidelines set out in their COVID-19 management documents which can be accessed on their website.

Seaforth Land requires all contractors to abide by Camden Council's requirements for building and construction and the Considerate Constructors Scheme, whereby contractors will commit to giving the utmost consideration to their impact on neighbours and the public.

## WORKING HOURS

We are proposing that construction works will only take place during the following days and times. These will need to be agreed by Camden Council following this consultation of the CMP:

- **Monday to Friday:** 8.00am – 18.00pm (with any 'noisy works' restricted on a voluntary basis to the hours of 8.00am – 10.00am, 12.00pm – 14.00pm, 16.00pm – 18.00pm). This is in line with Camden Council's guidance for construction.
- **Saturday:** 8.00am – 13.00pm (if agreed by Camden Council, no 'noisy works' to take place).

## NOISE AND DUST

- Noise, dust and vibration monitors will be installed, providing real time monitoring with text and email alerts sent to the project team if agreed levels have been breached. When an alert is received the works will cease.
- Acoustic barriers will be installed to mitigate noise.
- A monoflexed scaffold will be installed before demolition works to protect nearby buildings and residents from dust.

## HOW TO COMMENT

If you would like to share your views on our draft CMP, you can get in touch with us via:



[spacehouse@londoncommunications.co.uk](mailto:spacehouse@londoncommunications.co.uk)



0800 307 7965



[spacehouseproposals.co.uk](http://spacehouseproposals.co.uk)

Please send your comments by 26 July 2020.

We will then share the draft CMP with your feedback (which will remain anonymous) to Camden Council for their approval before demolition and the main construction works begin.



Proposed view of the front entrance from Kenble Street



Proposed view from North Kingsway



Proposed view of the forecourt from Kenble Street

## UPCOMING WORKS: SUMMER TO AUTUMN

The initial enabling works will include the 'soft strip' of the building, which is the process of removing all non-structural elements inside the building to facilitate the refurbishment works.

In the following weeks/months, we will continue to prepare for the commencement of the main construction works, including:

- Establishing the site welfare for our workers, including toilet and washing facilities.
- Putting up hoardings around the site.
- Removing asbestos.
- Continuing the internal 'soft strip'.
- Decommissioning the existing electric and mechanical services.
- Installing temporary services.
- Erecting the scaffolding around the building.

## KEEPING YOU REGULARLY UPDATED

During the construction programme, we will provide regular updates through our newsletter and our dedicated website:

[spacehouseproposals.co.uk](http://spacehouseproposals.co.uk)

- Notices will also be put up around the site outlining any up and coming activities.
- We are committed to ensuring we follow current Government guidelines on Covid-19 and will not be able to offer any face-to-face drop-in sessions for the foreseeable future.

## CONTACT US

If you have any questions about the works, please do not hesitate to contact us:



Lottie Colquhoun on 0800 307 7965



[spacehouse@londoncommunications.co.uk](mailto:spacehouse@londoncommunications.co.uk)



[spacehouseproposals.co.uk](http://spacehouseproposals.co.uk)

Contact Erith's Community Liaison Manager Cherrie O'Kane:  
[Cherrie.o'kane@erith.com](mailto:Cherrie.o'kane@erith.com) / 07894 259321

The Erith Senior Project Manager, Paul Millar, is now on site on a daily basis and will be pleased to provide any assistance. He can be contacted by:

Emailing [Paul.Millar@erith.com](mailto:Paul.Millar@erith.com)  
Calling 07584 233922

Screenshot of consultation website promoting CMP consultation





List of key stakeholders consulted on the CMP:

- Bee Midtown
- Bloomsbury CAAC
- City Lit
- Clearbell
- Cllr Awale Olad, Holborn and Covent Garden ward
- Cllr Julian Fulbrook, Holborn and Covent Garden ward
- Cllr Sue Vincent, Holborn and Covent Garden ward
- Covent Garden Community Association
- De Vere Grand Connaught
- Gardiner & Theobald
- King's College London
- Paul Smith
- Wild Street Residents Association

END

h:\clients 2019-2020\seaforth land - caa house\01 documents\cmp\summaryofconsultation.20.07.27.docx

Erith Contractors

# Appendix C

Neighbourhood Liaison Plan



# Neighbourhood Liaison & Communications Strategy

Enabling works to Space House  
1 Kemble St Holborn,  
London

WC2B 4AN



Prepared for:

The Client:

Seaforth Land Holdings Ltd acting on behalf of SLQR Trustee No 1 Limited and SLQR Trustee No 2 Limited as Co Trustees of SLQR Unit Trust No 3

Prepared by:

Erith Contractors Limited  
Erith House  
Queens Road  
Erith.  
DA8 1RP

<b>Document Name:</b>	Neighbourhood Liaison & Communications Strategy
<b>Project Reference:</b>	D10009
<b>Client:</b>	Seaforth Land Holdings Ltd acting on behalf of SLQR Trustee No 1 Limited and SLQR Trustee No 2 Limited as Co Trustees of SLQR Unit Trust No 3

### Document Production / Authorisation

#### Document Production / Approval Record

Issue No:	Name	Signature	Date	Position
Prepared by	Cherrie O'Kane		13/05/2020	Liaison/Conduct Manager
Approved by	Paul Millar		14.05.20	Senior Project Manager

#### Document Revision Record

Issue No	Date	Details of Revisions
000	15.05.2020	DRAFT ISSUE
001	20.05.2020	Reformat and add details to App2
002		
003		
004		
005		
006		
007		

# Table of Contents

<b>Section</b>	<b>Title</b>	<b>Page</b>
1.	Introduction	4
2.	Document Review	5
3.	Distribution list	5
4.	Communication and Operations	6
5.	Signage	6
6.	Contact details	7
7.	Handling of Complaints / Enquiries including Roles, Responsibilities & Timelines	7
	7.1 Recording of complaints / Enquires / Compliments / Timescales	7
8.	Communication meetings	8
	8.1 Prestart Community Liaison	8
	8.2 Ongoing Liaison meetings	9
9.	Project information Website	9
10.	Newsletters and Notices	9
11.	Local Schools Engagement & Local Employment Opportunities	10
12.	Site personnel inclusion	10
	12.1 Personal Engagement and involvement – (Extracts from current IMS)	11
<b>Appendices:</b>		
1	Complaints methodology flowchart	
2	Emergency Contacts (Project and Regulators)	
3	Examples of Complaints / Enquiry Log / Information notices / Distribution map / Contacts list	
4	Newsletter examples	
5	CLO Job description	
6	Local Ward Councillors information	
7	List of abbreviations	
8	Contacts list for notice boards and neighbours	

## 1. Introduction

The Erith Group is a family business, founded in 1967 by Tom Darsey. The company's ethos then, as it is today, is one of quality of service and client satisfaction. Since its formation the company has grown to form a Group comprising Erith Holdings Ltd, Erith Contractors Ltd, Erith Haulage Ltd, Erith Plant Services, Erith Training Services and Swanton Consulting Ltd.

Good liaison and engagement with the communities we visit is at the core of Erith's ethos. All sites are registered with the Considerate Constructors and CLOCS Schemes. Guidance and best practice from these schemes are fundamentally integrated into our systems, with the majority of our sites now regularly achieving the highest ratings and accolades.

Erith contractors have been engaged by SLQR to undertake Enabling works at Space House, including Soft strip, asbestos removal and structural alterations to the Kingsway Block and One Kimble Tower.

This Neighbourhood Liaison and Communications Strategy sets out the arrangements that will be implemented to manage project-specific communication and engagement with local residents and surrounding businesses throughout the enabling phase of works.

The primary purpose is to ensure all stakeholders are aware and adhere to agreed methods, mediums and timescales for issue of periodic circulars, newsletters and information notices, together with regular agreed consultation meetings which will be held throughout the life of the project.

At Space House, we will utilise our current and previous experience of working within the busy urban environments in Camden and neighbouring Westminster. We will be able to maximise pre-existing and on-going excellent relationships built up within the community over a number of years and through current and recent redevelopments nearby to the projects advantage ensuring the scheme is successfully delivered safely and with minimal impact in the locality.

Through our experience of large redevelopments such as the London Development Project (LDP) in Farringdon, 33 Grosvenor Place in Belgravia, the Whiteleys Redevelopment in Bayswater and currently Paddington Place, to name but a few, we have built an excellent reputation with Clients, local Amenity groups and the Considerate Constructors Scheme for our personal engagement and ability to deal effectively with difficult projects in demanding and sensitive locations.

We have found that key to achieving this is working closely with Local Authorities and Stakeholders, keeping everyone well informed and involved at every stage.

## 2. Document Review

If the Communication Plan requires amending this will be carried out by the Community Liaison Team or the Senior Project Manager, who will ensure all relevant people are informed and complete the amendment to ensure the document accurately reflects any required changes in strategy. Changes will be logged on the Document Revision Record in the relevant section.

## 3. Distribution List

Company	Role	Contact Name	Contact Details
Seaforth Land Holdings Ltd.	Client contact	Marcus Hale	
Gardiner & Theobald Ltd.	Designer	TBA	
	TBA	TBA	
	Project Director	TBC	
Erith Contractors Ltd	Operations Director	Scott Excell	07827 342239
Erith Contractors Ltd	Senior Project Manager	Paul Millar	07584 233922
Erith Contractors Ltd	Community Liaison /Conduct Manager	Cherrie O’Kane	07894 259 321
Erith Contractors Ltd	Community Liaison Officer	Fiona Ireland	07407 813 683
Erith Contractors Ltd	Senior Site Manager	Sean Morris	07802 799570
Erith Contractors Ltd	Site Manager	TBC	
Erith Contractors Ltd	Site Supervisor	TBC	

## 4. Communication and Operations

### Methods of Consultation

#### Project Level:

Method of Consultation	Method Selected for inclusion (Please Check)
Pre start Stakeholder Consultation Meeting	<input checked="" type="checkbox"/>
Progress Meetings	<input checked="" type="checkbox"/>
Minuted meetings with neighbours & Stakeholders	<input checked="" type="checkbox"/>
Newsletters and information notifications	<input checked="" type="checkbox"/>
24/7 direct contact numbers and email addresses for queries and complaints	<input checked="" type="checkbox"/>
Local school visits / liaison	<input checked="" type="checkbox"/>
Provide information & regular updates for a dedicated project website	<input checked="" type="checkbox"/>

#### Site Level:

Site Inductions	<input checked="" type="checkbox"/>
Daily Pre & Post Job Briefings	<input checked="" type="checkbox"/>
Periodic relevant 'Toolbox talks'	<input checked="" type="checkbox"/>
Hoarding and on site notice Boards	<input checked="" type="checkbox"/>

#### Individual Level:

Feedback/Observation/Suggestions Box	<input checked="" type="checkbox"/>
Open Door Policy	<input checked="" type="checkbox"/>

## 5. Signage

Prominent site signage will be fixed to the external hoarding and any fencing surrounding the site to warn potential intruders of the dangers within (e.g. voids, deep excavations etc.), in accordance with current UK law.

The site will be registered with the Considerate Constructors, CLOC's and Crane Safe Schemes. Promotion and information about these schemes will be displayed using official banners &/or notices to convey our (and our clients') responsibilities and attitudes towards the environment, neighbours and the wider community throughout the project in accordance with accepted Camden Borough Council's Construction guidelines.

## 6. Contact details

Residents and neighbours will be able to contact the Project and security team directly via published dedicated phone numbers and/or email addresses.

24 hour contact details for Emergencies, Complaints, Queries or Compliments will be displayed on the hoarding via noticeboards and placed in newsletters, Information notices and any other means or media as agreed with stakeholders. (see example contacts sheet in Appendix 3)

## 7. Handling of Complaints / Enquiries including Roles, Responsibilities & Timescales

**During working hours**, Erith's Community Liaison Manager Cherrie O'Kane and her team will be responsible for dealing with complaints in conjunction with the Senior Project Manager.

Paul Millar will be the first point of contact in most instances. All contact details will be displayed on hoarding notice boards at agreed locations around the site, in information notices and in newsletters.

The Project and Lead Site Managers will also be displayed on notice boards and available on site to assist with any queries and complaints should the main contacts be unavailable.

All operatives will be briefed on how to conduct themselves in public areas and to direct residents or members of the public to the management team if they are approached directly. This will be conveyed at their initial site induction with periodic refresher instructions via briefings throughout the life of the project.

**Outside working hours**, 24h/7 contact numbers will be posted onto the hoarding in notice boards around the site at various agreed locations, in Newsletters and Information notices.

### **Timescales**

Complaint/Enquiry received by email –

On receipt, a holding response will be issued within 24 hours\* and will be followed by a full response within 72 hours\* dependent on the nature of the complaint / enquiry.

Complaint/Enquiry received by phone –

If the complaint/query cannot be dealt with immediately, details of name and contact number will be obtained and the caller will be advised that they will receive a call back within 24 hours\* (callbacks are usually achieved within a few hours, dependent on the initial contact time and nature of call)

Complaint/Enquiry received by letter –

On receipt a response will be drafted and issued within 24 hours\* or as soon as reasonably practicable.

Responses requiring lengthy investigation or technical data not available at the time of the query will be responded to as soon as reasonably practicable. The enquirer/complainant will be given an estimated full response time in an appropriate manner and kept up to date with progress.

If neighbours feel that complaints are not being sufficiently addressed, residents and businesses will alternatively be encouraged to contact the client or their appointed representative direct via the project email address (To be agreed with Client).

\*Weekends excluded

## 7.1 Recording of Complaints / Enquiries / Compliments

All queries, complaints or compliments received will be recorded on receipt and updated appropriately by the Community Liaison team or Project Manager using ECL's complaints log ([Appendix 3](#)).

The updated log will be produced at all internal progress and communication meetings as required.

## 8. Communication meetings

Erith's Community Liaison Manager and/or the Senior Project Manager will attend all community Working Group meetings as required.

Internal communication team meetings will be held at agreed intervals, e.g. 1 week before Community Working Group (CWG) meetings, to prepare and discuss meeting strategy, such as review of presentations etc. and again before the meeting on the day if necessary. These meetings will be co-ordinated with the Client, Camden Council (if they wish to be involved) and relevant Stakeholders.

We will look to hold regular meetings with the CWG during the early works e.g. every one or two months, and then look to review this during the inevitable peaks and troughs of the programme.

A secure contacts database; compliant with GDPR regulations, will be established and used to issue periodic information notices and newsletters via email to all those who have registered for information.

During the works, regular ongoing meetings will be held with Camden Council's officers appointed to the project to streamline any issues that may arise during the works.

**PLEASE NOTE - Given the current situation and restrictions due to the Coronavirus pandemic, it may be necessary to hold the above communication meetings via video call, Teams or Skype for the foreseeable future. Specific arrangements will be communicated by the organiser and mutually agreed in advance.**

### 8.1 Prestart Community Liaison

At least 2 weeks prior to the start of works, an approved introductory Newsletter/Notice will be immediate neighbours and beyond (to an agreed distance surrounding the site). These will be hand delivered either by ECLs Community Liaison team or the Client's chosen representative, affording opportunity for the team to meet and introduce themselves to neighbours and for neighbours to voice any immediate questions or concerns.

By doing this, awareness or information regarding any elderly or disabled residents, or other groups in the neighbouring area, who might be affected by construction impacts in different ways (for example: religious groups with different holy days, or noise sensitive receptors) should come to light.

It will be particularly beneficial to make contact with and/or source contact details for local, building managers who in our experience are most likely to take on the role of liaison between the project and their building occupants throughout the works.

We would seek to routinely build in periodic casual visits or calls to each of the above throughout the project and any other needy neighbours identified following the initial introductory notice / walkaround. A member of the site management team / community Liaison team will be appointed to take on the role to build rapport and encourage ongoing dialogue. This will pre-empt the possibility of problems or complaints developing or escalating.

## 8.2. Ongoing liaison and meetings

From previous experience we have found that engaging with the community face to face prior to the commencement of any works is beneficial for the project as a whole. During early meetings, an introduction to the company and management team, followed by a short presentation outlining the various phases of the works; including timescales, logistics plans and key milestones followed by a questions and answer session will demonstrate to neighbours our intention to engage fully with them. At the initial meeting we will be able to answer concerns and give a level of confidence that they will be able to talk to us directly in the future. Building rapport and establishing close community links early on is, in our opinion key to managing expectations and limiting potential problems.

Also, at this initial meeting we will take the opportunity to ask preferences on how often neighbours would like resident meetings to be held and newsletters to be produced. We would also seek their guidance on what they would like included in future presentations and newsletters. This approach will engender a sense of inclusion and a certain level of input and control. We have found on other large projects that this approach is always well received not just by neighbours but by local amenity groups.

Separate to the above, it would be beneficial where possible to seek early stage meetings with any local Amenity Group leaders and include ward councillors, as they can often prove influential with their members/Constituents. Timescales and invitees for these meetings will be agreed with the Client beforehand.

## 9. Project information website

Consideration will be given to set up or feed into the existing project information website where neighbours and local businesses can be directed to for information about the project. A 'construction' page located on the website would not need to be complicated. The page could include newsletters, information notices, contact details and an invitation with perhaps an 'opt in' button or similar to register for regular updates by email. The website will contain access to the CMP and other project information as required by Camden Council.

This will ultimately reduce direct contact by phone or email for general enquiries and keep the local community well informed. This will also be a positive with the Considerate Constructors Scheme.

## 10. Newsletters and Notices

The introductory newsletter will be issued to local businesses and residents at least 2 weeks prior to commencement of works and will contain details such as start dates, intended works with relevant timescales and milestones. The initial newsletter will also include contact details for queries, complaints and out of hours emergencies, and an invitation to register their email addresses on a secure GDPR compliant database, so that they can receive future project communications directly via email. A contacts list sheet will additionally be issued at this time which will contain information about who to contact and when. (see example in Appendix 3 & page 19 of this document)

Information notices will be issued via email to registered contacts and hand delivered locally when necessary e.g. any late notice large deliveries requiring Traffic Movement Orders (TMO's), changes / scheduled disruptions on site etc. Notices will be issued in advance of the planned activity. These information notices will be issued as soon as possible following Camden Council's guide for contractors.

Regular Community newsletters and periodic Information Notices requiring distribution will be carried out in conjunction with the clients chosen representatives using the relevant distribution area map as agreed by all parties and in line with relevant guidance issued by Camden Council.

Actual production, distribution methods and cost responsibility to be agreed.

## 11. Local Schools Engagement & Local Employment Opportunities

Where appropriate, opportunities will be offered to local schools, colleges and universities to visit the site. Appropriate preparatory steps will be taken, including relevant risk assessments prior to any visit.

Students will be given a brief induction and overview of site activities, then provided with relevant personal protective equipment prior to viewing site within prepared safe zones.

Sufficient staff will be made available during visits to accompany and ensure the safety of all groups.

Local schools and colleagues will also be offered careers advice sessions to promote and inform students on relevant pathways towards careers in the demolition / construction industry.

Erith Contractors will promote the procurement of local labour wherever possible & provide relevant training opportunities not readily available through mainstream education where necessary.

Erith will look to work with new employees, ensuring an effective transition into work. Every endeavour will be made to use Local businesses wherever possible. Erith will additionally seek to use local businesses for upcycling and distribution of demolition materials.

## 12. Site Personnel inclusion

Operatives will be encouraged to feedback on any Health, Safety & Environmental issues or concerns by means of an open-door policy, at induction and during method statement explanation. When operatives feedback and suggestions are discussed, they will be recorded and analysed for any impact on the community.

ECL's Observation Card system will be used and will allow for anonymous reporting, Monthly awards will be given to incentivise operatives to take part.

A 'you said' 'we did' notice board will be sited within the welfare area so that site personnel are aware of consideration given and any action taken.

Project specific awareness training and tool-box or task health, safety and environment talks will be given by the Project Management team at appropriate intervals. This will enable the team to identify any concerns also to review general safety and environmental awareness for consideration of any impact to the surrounding communities or local businesses which may be relevant for inclusion in newsletters or information notices.

Smoking and vaping areas will be set up on site where they will not be externally visible or affect neighbours/third parties.

PPE will not be permitted off site by any site personnel during breaks to minimise the visible impact of the site on neighbours.

## 12.1 Personnel Engagement and involvement (Extracts from current IMS):

### Sub-contractor

- All sub-contractors are to nominate a suitably qualified person to act as a liaison point with ECL to ensure that communication channels are established and maintained throughout the project.
- All sub-contractors will be expected to carry out their works in accordance with all relevant Health, Safety and Environmental legislation and the requirements of the Project Management Plan.
- All sub-contractors will supply to Erith Contractors Ltd the results of any assessments that they carry out, and any information they have on any hazards arising from their operations that could affect others or the Environment.
- Sub-contractors must co-operate with Erith Contractors Ltd on any measures to ensure compliance with Health, Safety and Environmental legislation or to prevent danger.
- Instructions regarding social distancing due to COVID 19 government guidance must be fully adhered to.

### Employee responsibilities (Including Sub-contractors)

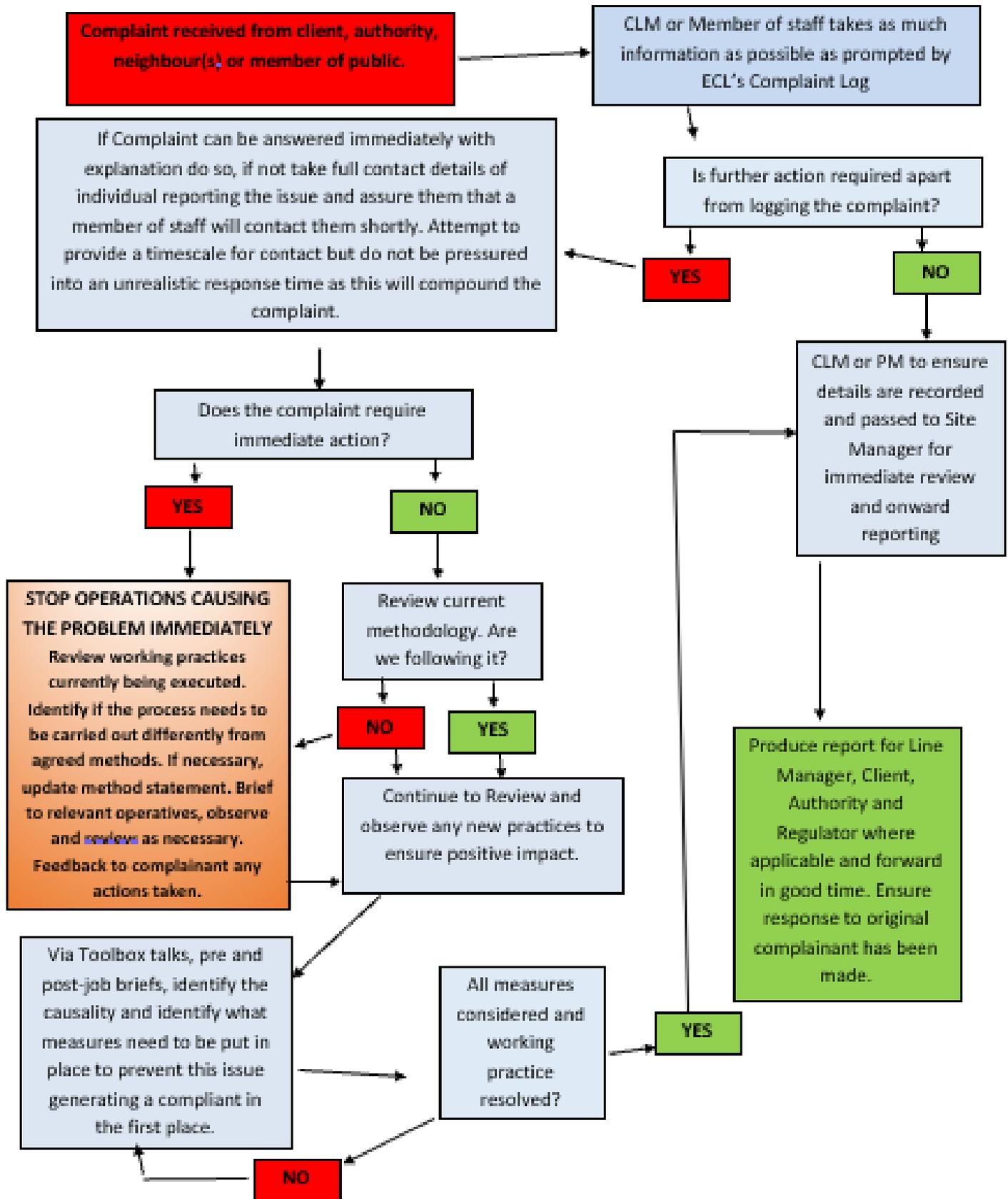
Employees will adopt the following principles to achieve the Health and Safety, Environment and Community Liaison standards required. The principles are applicable to fully employed, part-time, self-employed and all contracted personnel.

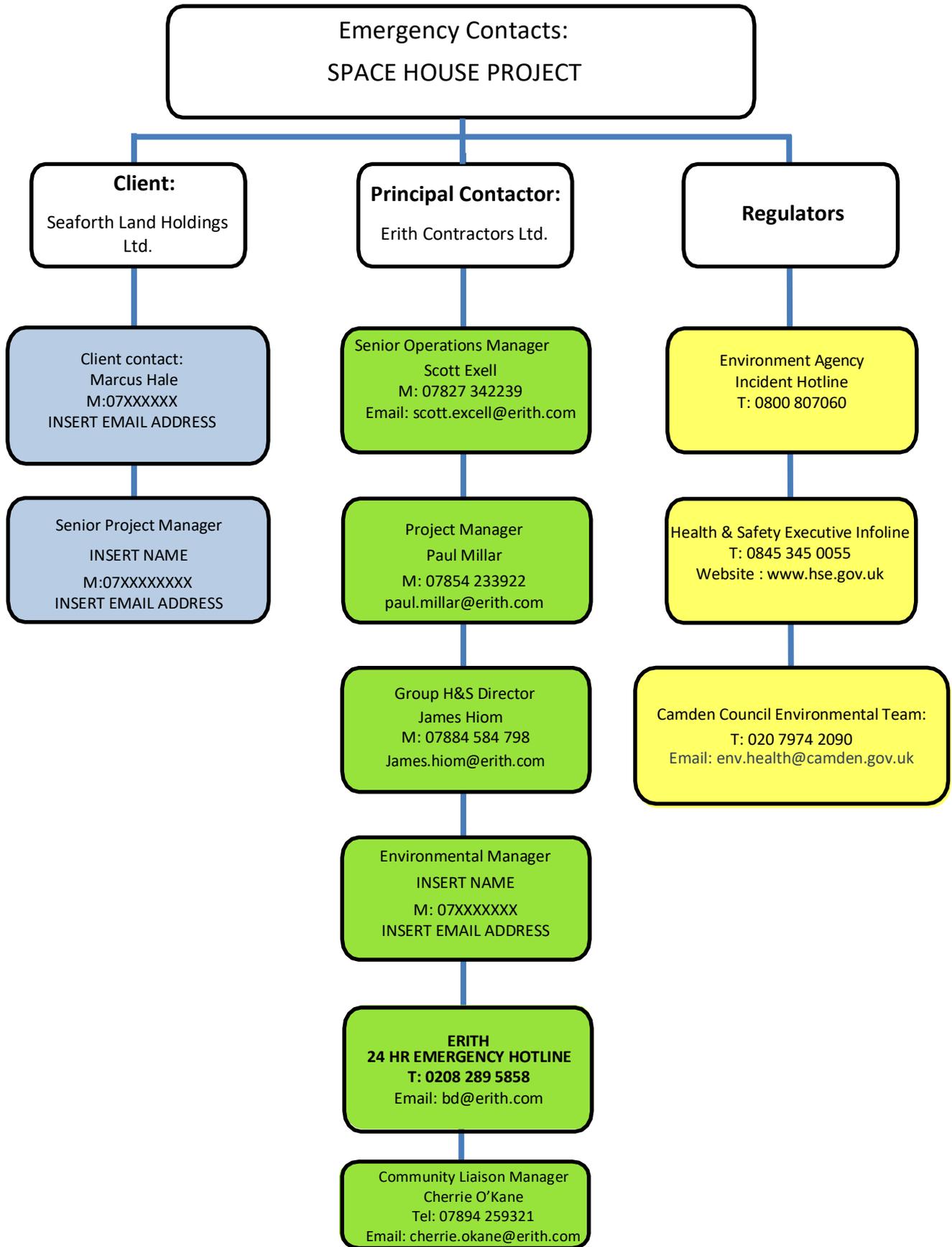
- Comply with all instructions given by management which are likely to affect their health and safety or may have an impact on the environment and/or local community or businesses.
- Adhere to the site rules.
- Comply with Erith's no smoking policy and use established permitted smoking/vaping areas only.
- Make proper use of the health, safety and welfare facilities and equipment provided.
- Make full and proper use of personal protective equipment.
- Refrain from wilful interference with anything provided in the interests of health, safety, environment and welfare.
- Report any hazards found.
- Be vigilant, identify and report any potential risks.
- Ensure management are made aware as soon as possible of complaints by residents or the public.
- Report immediately any accidents or near misses
- Treat neighbours and members of the public with due respect and consideration.
- Adhere to all instructions given relating to social distancing and COVID 19 Government guidance for construction workers.
- Be aware of Erith's established yellow card/red card disciplinary procedures (explained within the site induction)

# Appendix 1

## Complaints Methodology Flowchart

### Procedure 15 – Non-Conformance ISO14001





## Complaints / Compliments Log / Information notice

Sample of complaints log that will be used: Word doc.

Sl. NO	ENQUIRY REF. NO.	PHONE	NO.	ENQUIRY / COMPLAINT (in short)	Received / In progress	Finalising / Response	Response sent to residents	Further info & response date if applicable. Issues continue? date	Closed
1									
2									
3									
4									
5									
6									
7									
8									

QUERIES	COMPLIMENTS	COMPLAINTS	NON-SITE RELATED	TOTAL	CLEARED	OUTSTANDING	COMMUNITY LIAISON				
							NEWSLETTERS	INFORMATION NOTICES	CLG MEETINGS HELD	ECS (average of average in)	
										VISITS	SCORES OUT of 10

BREAKDOWN OF MAIN COMPLAINTS RECEIVED			
DUST	NOISE	VIBRATION	lights

Distribution area for initial neighbourly consultation of CMP consisting of 2,300 addresses:



Example of can information notice:

**WHITELEYS REDEVELOPMENT**

**INFORMATION NOTICE 24**      07/08/2019

**Notice regarding the delivery of a 70-Ton Breaker with attachment**

Dear Neighbour,

On Tuesday 13th August 2019 between the hours of 19:00 – 21:00 a 70-ton breaking excavator with a large attachment will be delivered to the site via Raden Place.

Due to the size of the machine, a Traffic Movement Order (TMO) is required. These orders are co-ordinated and approved by the Council, TfL and the Police who then issue the movement order.

Vehicles requiring Traffic Movement Orders are only allowed to move through London after 7pm and before 7am. The delivery will therefore be made between 7pm and 7am on the day.

A full team of experienced traffic marshals will need to remain on site beyond the normal site finish of 6pm. They will be visible at site preparing for the delivery but no site works will take place. On arrival, the team will control the delivery, supervised by the site logistics manager. The Load will stop in Raden Place whilst the machine is tracked off and onto the site.

If all goes to plan, the whole team should not exceed 1 hour. Any through traffic will be asked by the Traffic Marshals to wait.

If you have any questions or concerns regarding the information in this notice, please do hesitate to contact Paul Miller or Charrie O'Keane (contact details below)

Kind regards  
Erith Contractors Ltd

Communication team contact details:  
For any immediate enquiries please contact the following:

- Charrie O'Keane (Site (personally visit)/Contract Manager)  
mobile - 0754 220221 email - [charrie@erith.com](mailto:charrie@erith.com)
- Paul Miller (Site Project Manager)  
mobile - 0754 220221 email - [paul.miller@erith.com](mailto:paul.miller@erith.com)

End of team please contact:  
• Erith head office - 01474 220221

Information in this email will be forwarded to the site team on the next working day if sent outside normal working hours

ENABLING THE CONSTRUCTION INDUSTRY FOR 50 YEARS

Example template of contacts information sheet for neighbours:

Reason for contact	When to call	Name	Role	Telephone No.	Contact address
In an emergency concerning the site throughout 24hrs a 365 days of the year	Emergency 24hrs a 365 days of the year	Paul Miller	Erith - Project Manager	0754220221	<a href="mailto:paul.miller@erith.com">paul.miller@erith.com</a>
All queries or complaints throughout 24hrs a 365 days of the year	24hrs a 365 days of the year	Charrie O'Keane	Erith - Community Liaison / Contract Manager	0754220221	<a href="mailto:charrie@erith.com">charrie@erith.com</a>
Out of hours at any time of the year in a position on or around the site	Out of hours (8pm-7am) 7 days a week	Site Security Team	Site Security Team	07533333	
For information regarding the Whiteleys Redevelopment in general	9am-5pm	955	955	07533333	
Information regarding the works on site	9am-5pm	955	955	07533333	
Out of hours disturbance complaints 24hrs a 365 days of the year	Out of hours (8pm-7am) 7 days a week	Erith Head Office	Erith Head Office	0754 220221	<a href="mailto:0754220221">0754220221</a>
Opening information or questions if unable to contact the site communication team	9am-5pm	Erith Head Office	Erith Head Office	0754 220221	<a href="mailto:0754220221">0754220221</a>

# Appendix 4

Example of Erith Newsletters

**Erith Community Newsletter**  
**WHITELEYS REDEVELOPMENT**  
 March 2015 Issue number: 6

**FOR SITE RELATED ENQUIRIES OR QUESTIONS RELATING TO SITE ACTIVITIES PLEASE CALL PAUL OR CHRIS AT ANY TIME**

**Project Manager:** Paul Miller  
 Email: paul.miller@erith.com  
 Mobile: 07764 232622

**Community Liaison Manager:** Chris O'Hare  
 Email: chris.o@erith.com  
 Mobile: 07764 232622

**Local Site Manager:** Sam Sherry  
 Email: sam.sherry@erith.com  
 Mobile: 07764 232622

**Site of Interest Contact: Site Security:** Tel: 07764 240526

**Whiteleys City Council (WCC):** Dan Birmingham  
 Email: dan.birmingham@whiteleys.gov.uk  
 Tel: 0207 6414000

**Site Working Hours:**  
**Monday - Friday:** 08.00 - 18.00  
**Saturday:** 08.00 - 13.00

There will be no heavy breaking or load test cutting during the hours of 13.00 - 13.30, 14.30 - 16.30 and all day Sundays unless prior special permission is obtained from Westminster City Council. Normal site works will however continue to during these hours.

**Dear Neighbour**  
 Welcome to the March edition of our newsletter. Recent progress:  
 Description of the car park structures and how they will be built in a number of stages. These works are currently on schedule.  
 Delivery and installation of both beam spans has been completed.  
 Further progress for the central zone and further to the removal of the existing in situ concrete.  
 Installation of the wall prepping below ground at the Queensway elevation is now complete.  
 Removal of the car park has now been activated using the new beam spans and high piles.  
 All four installed security.  
 There are two site based security guards on site 24 hours a day. These guards are in uniform and carry out a regular patrolling of the site. A CCTV system is in place around the perimeter. The out of hours telephone number for the security team can be found in the contacts section above.  
**Purchaser Gardens**  
 Building of the temporary substation bases is complete and currently awaiting UK Power network grid supply. Follow on construction works. Working will begin on 15 April.  
**Main site and site remains in Purchaser Gardens, Robin Place**  
 Demolition of car park structures has progressed well using the high pile equipment and all near completion. This material will be removed from site by end of April. We would be pleased to have the demolition of the car park to be completed by the end of April 2015.

**Community**  
 The heritage windows in Queensway continue to be removed and need to safely abutted for refurbishment and structural reinstatement.  
**What's next?**  
 We will continue to demolish the car park including all structures above and below ground level to the top of the basement slab. This is on schedule and expected to be complete by the end of April.  
 Heritage beam removal will continue with expected completion in September.  
 Carried down removal will be complete end of April.  
 Excavation work for Southern equities demerol will continue.  
 Facade frame heritage works will start underway and will continue during Queensway.

**Site visits continue**  
 In recent weeks we have received enquiries regarding objections to the works. We would like to assure neighbours that independent and free vibration monitoring is being done all around the site, with riggers set to give instant alerts if any vibrations occur. In addition, we have installed high quality, but by some, recordings (log) that record the minimum level when vibrations occur. Individual perception will vary from person to person. We do not want anyone to worry unnecessarily and for this reason, if you have any concerns, but your property may be experiencing abnormal vibration, please contact Paul Miller or Chris O'Hare who will be happy to arrange a visit and individually assess levels in your home. Contact details can be found on the first page of this newsletter.

**Erith**  
 Latest progress images from site

**Planned Works April to June 2015**  
**Queensway** - Facade frame installation and heritage window removal activities.  
**Purchaser Gardens** - Installation of a pedestrian tunnel will enter the topsoil and lay mat to be completed for public use while the remainder of the facade retention works continue.  
**Robin Place** - Demolition of the car park will continue down to the top of the basement slab. Once complete, on-site processing will be used to recycle the demolition rubble and create re-use for a piling platform.

**July Dates - 10 month timeline**  
 March - end of April 2015 - Groundwater of Whiteleys car park down to the top of the basement slab.  
 March - September 2015 - Heritage windows receive.  
 March - June 2015 - Facade retention frame erection.  
 April - May 2015 - Shaffed erosion and materials placement to rear of the main Shopping Centre in preparation for demolition.  
 June/July - November 2015 - Demolition of the Shopping Centre.  
 \*All dates are subject to change

**Community Liaison**  
 Demolition phase community meetings  
 The monthly community liaison meetings are intended to focus solely on the enabling and demolition phase of works. A full presentation is usually given by Paul Miller, our project manager, who will explain methods of demolition, logistics and any programme dates.  
 The next meeting is scheduled for 09/04/2015 at 10.30. The meeting will be held at Stratford House meeting rooms located at Purchaser Centre, Queensway. Regular attendance to these communication meetings will ensure that you are kept fully informed of the redevelopment as the work progresses and will offer opportunity to air any concerns or questions you may have. If you would like to be added to the distribution list to receive regular newsletters and information follow by email please visit the redevelopment website online at [whiteleysdevelopment.co.uk](http://whiteleysdevelopment.co.uk) to register, alternatively you can call, text or email Chris or Paul and leave your details. Contact details are on the first page of this newsletter.

**Achievements**  
 Erith have earned the ISO9001:2015 Gold Award 2015 for outstanding Health and Safety Performance. On 27th March Erith Contractors were confirmed as winners of the Gold Award from the Royal Society for the Prevention of Accidents. The international recognised award standards which are the most sought after accolade by organisations from every sector. The award ceremony will be held in June at the 2015 Health and Safety Awards ceremony held at the ExCeL.  
 Erith have been named as Principal Contractor for Phase 2 of the Paddington Cube developments. These works will consist of enabling works, bulk storage and construction of a multi-level basement.

[erith.com](http://erith.com) | [www.erith.com](http://www.erith.com) | 020 760 8000

Example of an Information Bulletin (Introductory)

**Erith**  
**33 Grosvenor Place**  
**Information Bulletin 01**  
 February 2017

**Dear Resident / Neighbour**  
 Erith Contractors have recently been appointed by our client to undertake the demolition and enabling package of works for the scheme formally known as 33 Grosvenor Place.

Erith Contractors Ltd have been involved in demolition for 50 years and are currently working on some of the most prestigious projects in London. Due to the nature of our business, we are mindful of the inconvenience that a project of this nature can cause and will constantly strive to minimise the impact on the local community as much as possible.

**Project Description**  
 Undertake the full strip and structural demolition of the internal structure while retaining the majority of the 1930's facade. The western facade will be partially demolished to leave just one level remaining and an all design and install temporary support works to retain facade structures located on Grosvenor Place, Chester St, Wilton St and the building footings on Chester Street which will remain in situ. The existing basement slab will be partially retained and sections of the new building basement slab will be constructed as part of this contract.

**Project Duration**  
 The Demolition and enabling contract will commence on the 20<sup>th</sup> February 2017 and will be completed on the 20<sup>th</sup> May 2018 (50 Calendar Weeks).

**Project Working hours**

- 8.00am and 4.00pm Monday to Friday (No heavy works, namely permissive breaking between the hours of 10am - 12pm & 2pm - 4pm)
- 8.00am to 5.00pm Saturday (No heavy works, namely permissive breaking)

Heavy breaking works will be restricted to six hours per day in accordance with the City of Westminster code of construction practice 2016.  
 The noisy periods are from 10am - 12pm, 12pm - 2pm & 4pm - 5pm, no permissive breaking works will be undertaken outside of these times and at no time on a Saturday.

**What happens First?**

- Site strip including: Welfare Set-up at ground level south and installation of emergency fire points and safety signage throughout. Install site wide temporary power/lighting. Existing Services Decommissioning. (F&E Marked)
- Internal structural demolition enabling works. (Light & beyond)
- Soil Strip (The removal of internal floors, slabs, and non-structural partitions to leave a clean structure ready for structural demolition).

**Erith**  
**Logistics**

- All vehicle movements will be fully controlled and via the existing building pedestrian vehicle entrance on Chester Street.
- Vehicles will approach site via Grosvenor Place from the South and head north on departure.

**33 Grosvenor Place - Proposed Site Logistics Plan**

**Main Site Team Contacts**

- Paul Miller (Erith Project Manager)  
 Mobile: 07764 232622 | Email: paul.miller@erith.com
- Chris O'Hare (Erith Community Liaison Officer/Contact Manager)  
 Mobile: 07764 232622 | Email: chris.o@erith.com

Please contact Paul or Chris should you have any queries or concerns with regards to the planning or on-going works.

## Appendix 5

### Community Liaison Officer Job Role:

- Liaise with all Stakeholders and site management to ensure suitable methods and timescales concerning all aspects of community liaison for projects are agreed and put in place.
- Attend Resident Liaison and Communication meetings when required.
- Ensure Complaints / Queries / Complement Logs are set up and meet with Clients specific requirements.
- Ensure relevant logs and records are kept and updated timeously.
- Ensure relevant contact details are displayed appropriately and updated as necessary.
- Engage with local communities and businesses surrounding the assigned project by appropriate means e.g.: personal visits, letters, newsletters, signage etc.
- Ensure responses to complaints and queries are actioned and closed out within agreed timescales.
- Ensure all site personnel including sub-contractors at assigned projects receive and understand information and/or training regarding Erith's complaints reporting procedures and how to engage appropriately with the public.
- Produce reports when required.
- Produce and ensure issue of monthly Newsletters and information notices when required.
- The CLO must ensure the site management team are informed prior to visiting residents if unaccompanied.

Liaison and management team members will be required to inspect the exterior of the site daily, additional to the security team, to ensure staff conduct and site aesthetics are maintained to a high standard.

### Local Ward Councillor's information

Space House is located in Camden's Holborn & Covent Garden Ward.

Below are the 3 current Ward Councillors and their contact details:

Name Cllr Sue Vincent - Labour

Phone 077 9530 6779

Email [sue.vincent@camden.gov.uk](mailto:sue.vincent@camden.gov.uk)



Name Cllr Julian Fulbrook - Labour

Phone 020 7405 2753

Email [julian.fulbrook@camden.gov.uk](mailto:julian.fulbrook@camden.gov.uk)



Name Cllr Awale Olad - Labour

Phone 020 7974 2792

Email [awale.olad@camden.gov.uk](mailto:awale.olad@camden.gov.uk)



## Appendix 7

### List of abbreviations

ECL	Erith Construction Limited
TMO	Traffic Movement Order
CLOCS	Construction Logistics and Community Safety
CCS	Considerate Constructors Scheme
TBC	To Be Confirmed
TBA	To Be Advised/Agreed
PM	Project Manager
CLM	Community Liaison Manager
CLO	Community Liaison Officer
CWG	Community Working Group
IMS	Integrated Management System

## Appendix 8

### Contacts list for notice boards and neighbours

Reason for contact	When to call	Name	Role	Telephone No.	Email address
In an emergency concerning the Site throughout Erith's phase of works.	8am-6pm Mon – Sat or at any time 24/7 in an emergency	Paul Millar	Erith - Project Manager	07584233922	<a href="mailto:paul.millar@erith.com">paul.millar@erith.com</a>
All queries or complaints throughout Erith's phase of works, also in an emergency if unable to contact Paul	8am-6pm Mon-Sat or at any time 24/7 in an emergency	Cherrie O'Kane	Erith – Community Liaison / Conduct Manager	07894259321	<a href="mailto:cherrie.o'kane@erith.com">cherrie.o'kane@erith.com</a>
Out of hours at any time if there is a problem on or around the site	Out of hours (Mon-Fri 6pm – 8am, Sat-Mon 1pm-8am)	Site Security Team	24-hour on-site Security	07XXXXXX	
For information regarding the Space House redevelopment in general		TBC	XXX	07XXXXXX	
Information regarding the works on site		TBC	Camden Council	XXXXX	
Out of Hours disturbance complaints (If you are unable to resolve problems with the site team)	Outside of working hours	Camden Council's Out of hours team	Environmental action line	0207	<a href="#">Email address</a>
General information on weekdays if unable to contact the Site communications team.	switchboard manned weekdays during working hours only	Erith head office	Erith Construction Ltd. Erith House Manor Road ERITH Kent DA8	0370 950 8800  Will be answered by switchboard operator during normal working hours Mon-Fri only	<a href="mailto:bd@erith.com">bd@erith.com</a> responses to this email will be forwarded to the site team on the next working day if sent outside normal working hours

Erith Contractors

# Appendix D

Surrounding Projects/Schemes



## Surrounding Projects

large scale projects (in addition to identified local projects)

### LINCOLN HOUSE

UNDER CONSTRUCTION



#### PROJECT INFORMATION

**Status**  
Under Construction

**Borough**  
Camden

**Size**  
80000 sq m

**Completion**  
2021

#### LOCATION

Lincoln House, 300 High Holborn, Holborn,  
London WC1V 7JH, UK



# KING'S CROSS P2

UNDER CONSTRUCTION



## PROJECT INFORMATION

Status  
Under Construction

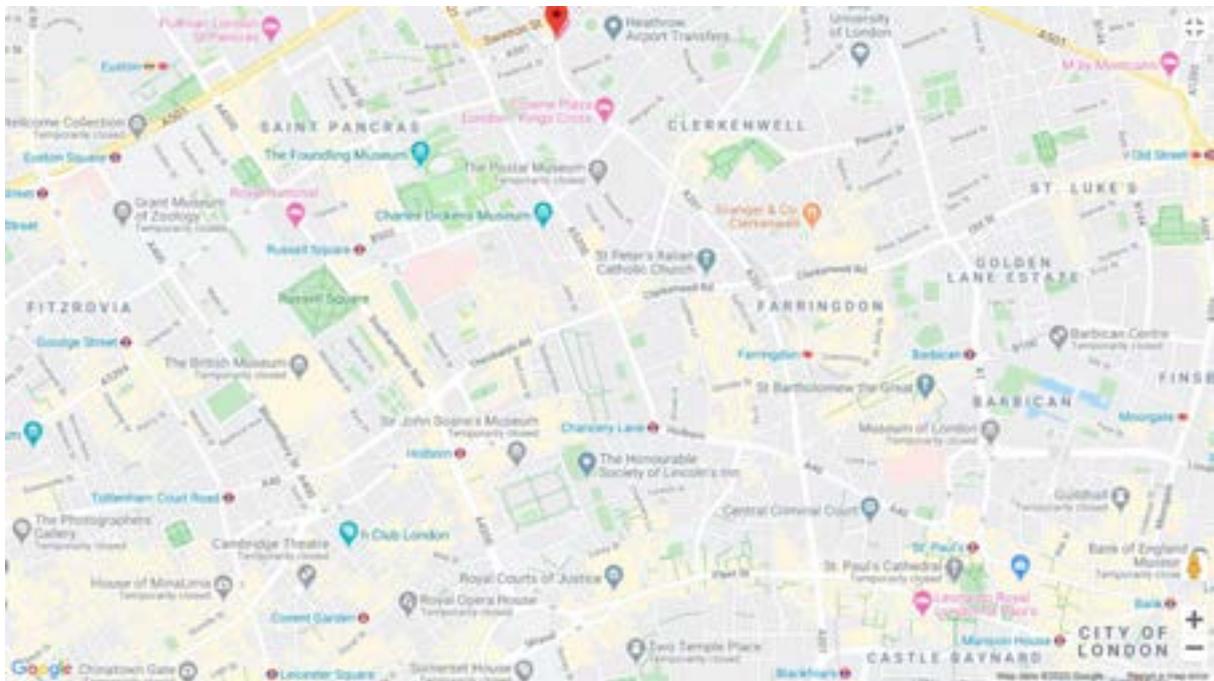
Borough  
Camden

Size  
23000 sq m

Completion  
2021

## LOCATION

King's Cross Rd, Kings Cross, London, UK



# 1 TRITON SQUARE

UNDER CONSTRUCTION



## PROJECT INFORMATION

**Status**  
Under Construction

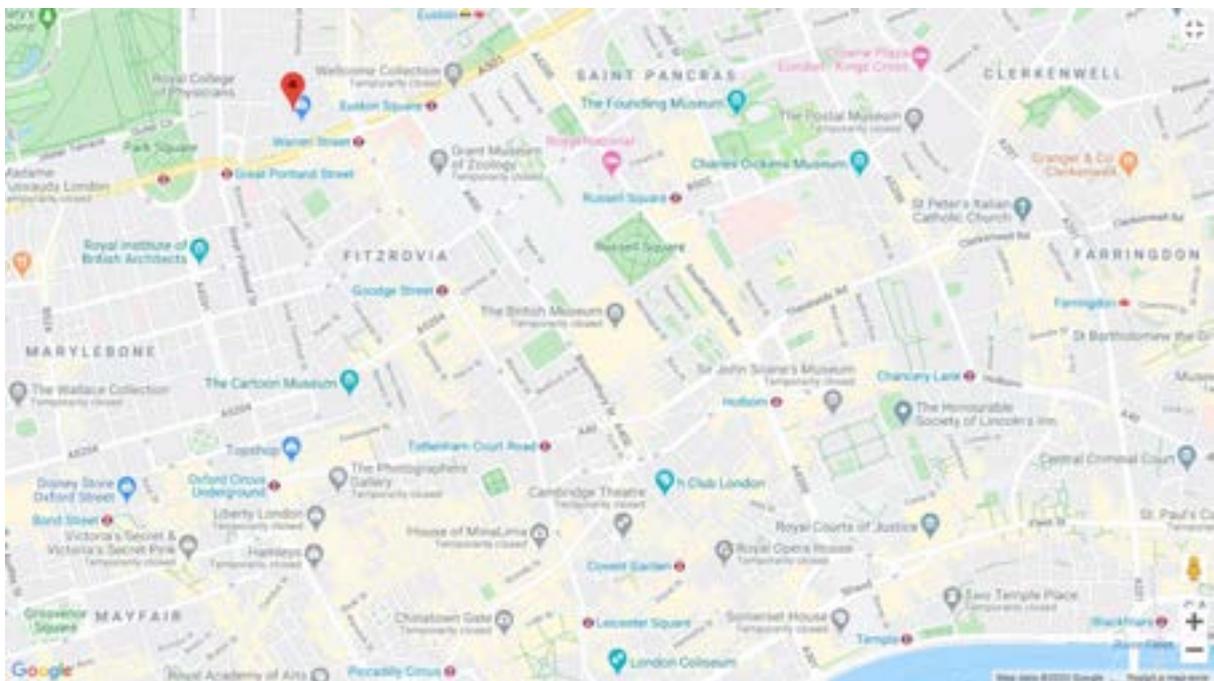
**Borough**  
Camden

**Size**  
34003 sq m

**Estimated completion**  
December 2020

## LOCATION

1 Triton Square, Kings Cross, London NW1  
3XL, UK



Planning Granted

## Projects

AWARDS SUBMISSIONS **PROJECTS**

**FILTERS**

Featured in

Type to search

Filter by borough

CAMDEN

Filter by completion status

PLANNING GRANTED

This directory is created on the basis of information supplied by our users.



**Former Maria Fidelis School Site  
Meanwhile Use**

Planning Granted

Innovative meanwhile use of a former school, repurposed to provide high quality workspace, community facilities, allotments & gardens, as well as a Construction Skills Centre to enable new



**Ion/DRI**

Planning Granted

University College London's redevelopment of the Eastman Dental Hospital site will become home to a new centre for neurology offering a world-class research and hospital environment.

[VIEW PROJECT >](#)



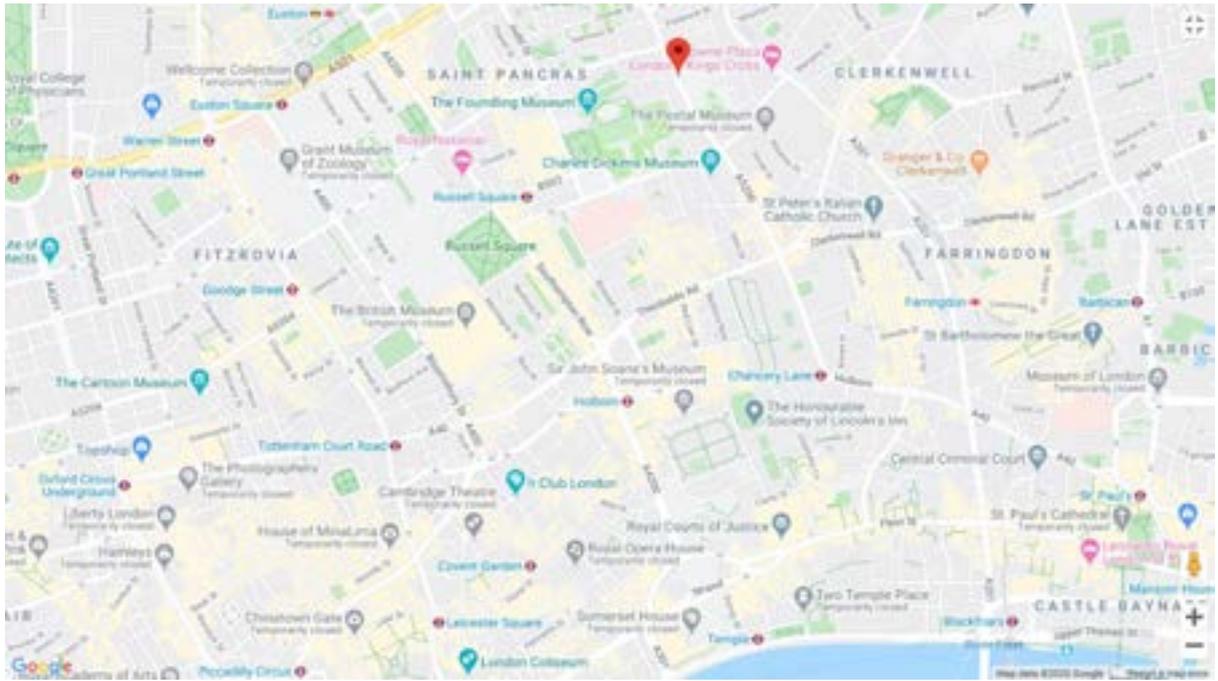
**115-119 Camden High Street**

Planning Granted

A new hotel led development on prominent corner of Camden High St with 80 new hotel rooms, 3 new social rented homes and an improved retail outlet.

[VIEW PROJECT >](#)

Ion/DRI



Erith Contractors

# Appendix E

Traffic Management Plan



# Traffic Management Plan for Demolition works at:

Space House

WC2B 4YN



**Prepared for:**

Seaforth Land Holdings Ltd

**Prepared by:**

Paul Millar  
Erith Contractors Ltd  
Erith House  
Queen Street  
Erith  
Kent  
DA8 1RP

28.07.2020  
TMP 001 Rev 03

## Contents

1. Introduction
2. Supply Chain
3. Programme
4. Vehicle Routes
5. Site Logistics
6. Materials
7. Vehicles
8. Parking Arrangements/ Alternative Travel Arrangements
9. Risk Assessments
10. Further Recommendations

Appendix A – Aerial Site Views

Appendix B – Swept Path Analysis

Appendix C – Test Drive of New Access and Egress Route

## 1. Introduction

### Project Description

Site Address:  
1 Kemble St  
Holborn, London  
WC2B 4AN

For this project Erith believe the scope of works is as follows;

- Preconstruction Services Period (PCSA)
- Developing methodologies
- Obtaining permits, licenses and consents
- Identifying services
- Developing temporary works designs
- Placing orders for plant and equipment – most notably tower cranes
- Designing and fabricating temporary propping
- Engaging with the local community
- Site establishment including welfare and hoarding.
- Installation of temporary electrics and services.
- Mechanical and Electrical Surveys.
- Protection to services such as the UKPN substation
- MEP disconnections and plant removal
- Scaffold erection to encapsulate the works.
- Monitoring and surveying works
- Asbestos Removal works.
- Soft strip of all remaining non-structural items site wide to both structures
- Removal of all windows and glazing.
- Erection of Tower Crane
- Temporary Works installation to Precast façade panels
- Removal of Precast façade panels.
- Temporary Works to basement retaining walls
- Structural opening up works to basement (One Kimble Street Tower).
- Ground Floor demolition works to Kingsway House.
- Architectural Screed Removal to Kingsway House.

## Site Location

Space House is situated within the London Borough of Camden. Space House was constructed in the late 1960's and it comprises of the Tower Block and Kingsway House which are independent but connect with each other via a link bridge structure. The area is surrounded by a mixture of retail, residential, commercial and landmark properties and high level of pedestrian traffic, cyclist activity with busy London underground infrastructure in the vicinity.

The location of the project is well situated for public transport with Holborn, Temple and Covent Garden stations within walking distance of site. As well as the tube, the site address is well served by a number of local bus routes.

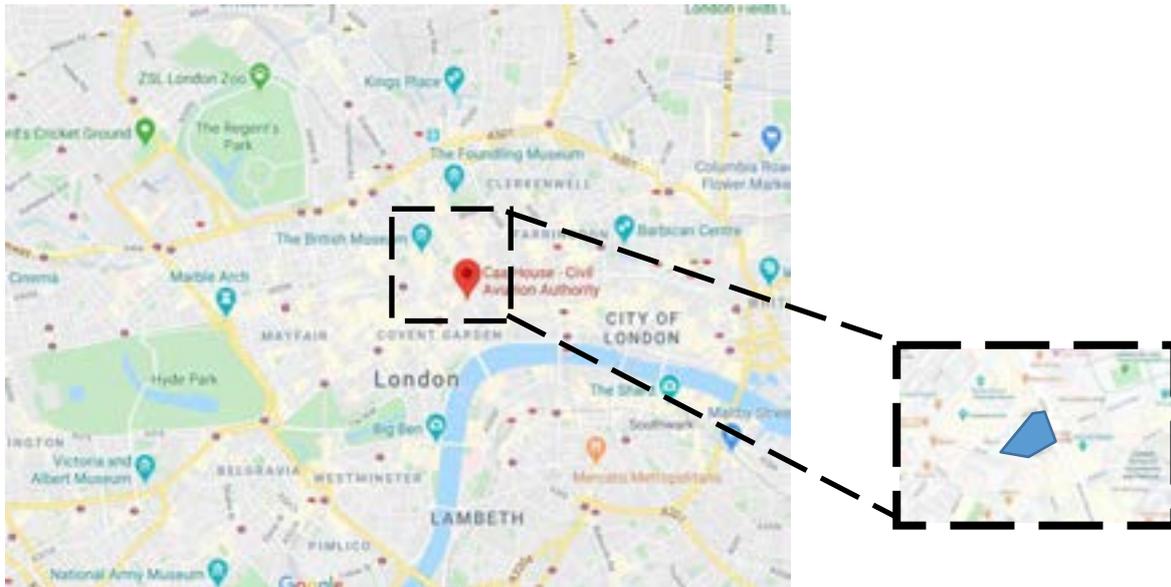


Figure 1 - Location of site

The specific constraints that are identified are as follows:

- Traffic logistics, pedestrian volumes and neighbouring deliveries.
- High volume of traffic and foot flow on Kingsway Road
- Adjacent residencies, offices, commercial premises and maintaining pedestrian access to the nearby pedestrian footpaths. Holborn Underground Station and Covent Garden Station in close proximity to the works
- Coordinating deliveries to site
- Protection of live substation within the site.
- Maintain access to UKPN substations on site
- Maintain 4no Parking bays for UKPN on site.
- Noise, dust and vibration controls.

Due to the nature of the works some residents and businesses may be disrupted during working hours. Erith will delegate a specific public liaison employee to keep relations with neighbouring parties.

All works outlined in this document will conform to the following documents;

Construction (Design and Management) Regulations 2015  
Management of Health and Safety at Work Regulations  
Lifting Operations and Lifting Equipment Regulations [LOLER]  
Provision and Use of Work Equipment Regulations  
Control of Asbestos Regulations  
BS6187:2011 Code of Practice for Full and Partial Demolition  
BS5975:2008 Code of Practice for Temporary Works Procedures and the

### **Statutory**

The environmental impacts of the proposed demolition work have been considered. Erith Contractors will be entering a section 61 application with Camden Council to ensure that any issues associated with the scheme are addressed prior to the work commencing.

The development will be registered with Considerate Constructor Scheme (CCS) which aims to encourage building and civil engineering contractors working adjacent to the town's streets to carry out their operations in a safe and considerate manner, with due regard to passing pedestrians and road users.

A dilapidation survey of the surrounding highways and street furniture will be undertaken on the day Erith take possession of the site. This survey will be issued to Camden highways department for record purposes.

Structures, including scaffold, need to be kept clear of utility covers and other council assets such as lamp columns where a 1m clearance around the column needs to be maintained.

All traffic marshals managing the site will be equipped with whistles and stop signs with concertina barriers installed manage pedestrians which vehicles enter and leave site.

## Why a Traffic Management Plan?

The purpose of this plan is to highlight and inform others of our intentions regarding the access and egress of vehicles and personnel from the site during the demolition phase of the works.

The document will assess all of the influencing factors and help to determine the most economical and least disruptive arrangements for the successful completion of the works.

It will look at the safest ways to operate vehicles in and around the site. It will also look to provide access routes away from accident blackspots and areas of congestion and ways to minimize the number of journeys.

Erith have recently renewed Gold FORS accreditation.

To minimise the impacts of construction-related vehicle movements and facilitate sustainable construction travel to and from the Proposed Development.

All activities relating to the site within the highway will be in accordance with the COL Code of Practice for Deconstruction and Construction Sites following best practicable means at all times.

All vehicles attending site will be required to access site immediately and switch off their engines. No vehicles will be allowed to wait on the local streets in the vicinity of the site.

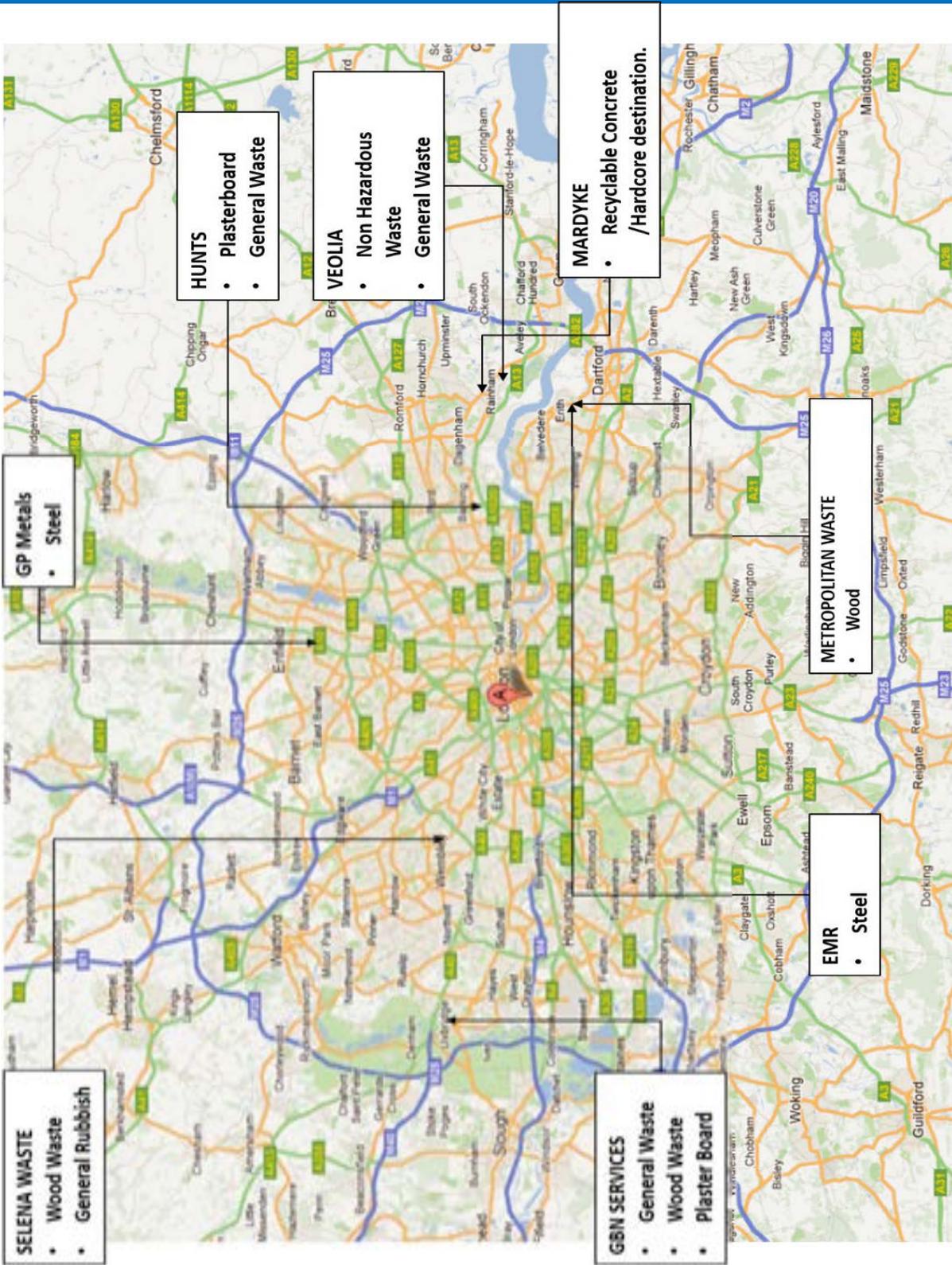
## 2. Supply Chain

The majority of arisings will be hauled by Erith Contractors own lorries. We have a large fleet of Gold FORS accredited vehicles comprising Roll on Off and tipper lorries as well as low loaders for the delivery and collection of heavy demolition plant. All vehicles are radio and GPS controlled. Vehicles will be called to site as and when required.

The following map shows the locations of our regularly used processing facilities. Vehicles will be take the arisings to one of these tips depending on what type of materials they are carrying. Where possible and certainly during the later stages of the works we will be sending hardcore to a facility with crushing capabilities and the lorries will be returning with crushed materials for the piling mat. We will aim to have as few empty trips as possible. This not only helps to reduce congestion but makes good economic sense. Furthermore we expect to be able to do a considerable amount of crushing on site subject to licensing and this will further reduce the number of trips.

Some of the sites shown are transfer stations and where mixed waste is sent from site to these tips the materials will be further separated into waste streams and then sent on to other facilities for processing or disposal.

Erith will monitor and audit downstream sites to ensure that our commitment to 98% diverted from landfill is achieved. Sites not meeting our criteria will be removed from our approved database.



### 3. Programme

Start Date: 1<sup>st</sup> July 2020

Duration of Works: 33 Weeks

Working times on site

Monday to Friday - 08:00 to 18:00

Saturday - \*08:00 to 13:00

\*Saturday activities are restricted and do not allow “noisy works”. I.e. percussive breaking or piling works.

Sunday - Only with prior consent from Camden Council

### 4. Vehicle Routes

All vehicles attending site will be required to access site immediately and switch off their engines. No vehicles will be allowed to wait on the local streets in the vicinity of the site. If any abnormal loads are required to service, the project which fall under a Metropolitan Police movement order the times of the movement will be advised to the highways and Environmental protection team at Camden Council.

#### 1. Site Plan

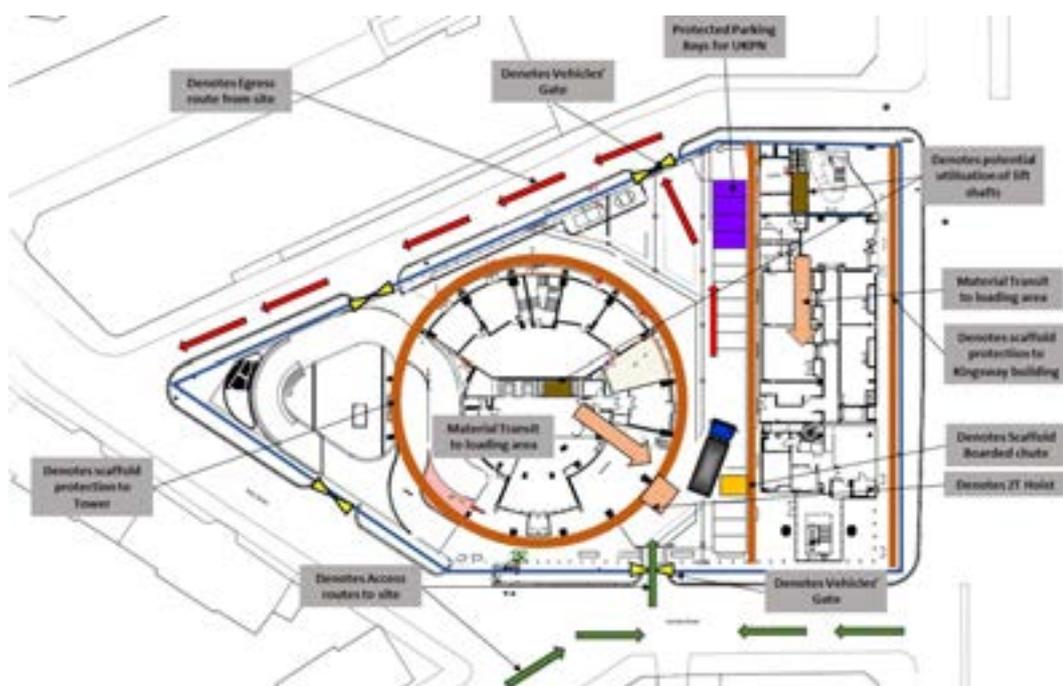


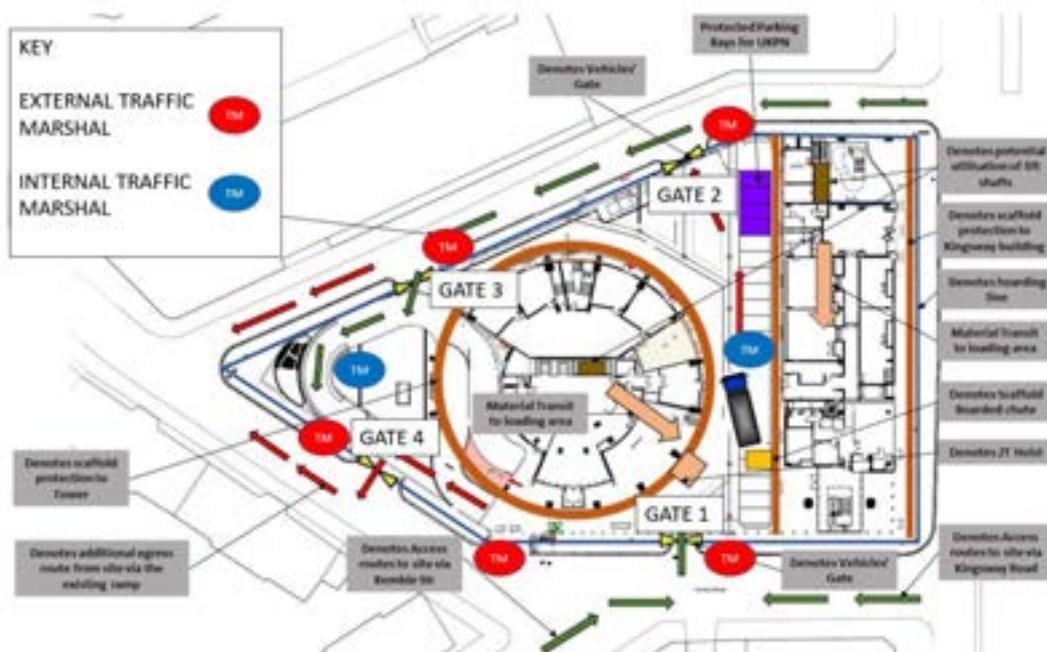
Figure 14 – Site Plan

## 2. Vehicle access and egress routes with consideration of local sensitive receptors

All vehicles attending site will be required to access site immediately and switch off their engines. No vehicles will be allowed to wait on the local streets in the vicinity of the site.

If any abnormal loads are required to service, the project which fall under a Metropolitan Police movement order the times of the movement will be advised to the highways and Environmental protection team at Camden City Council.

### Access and Egress Gates



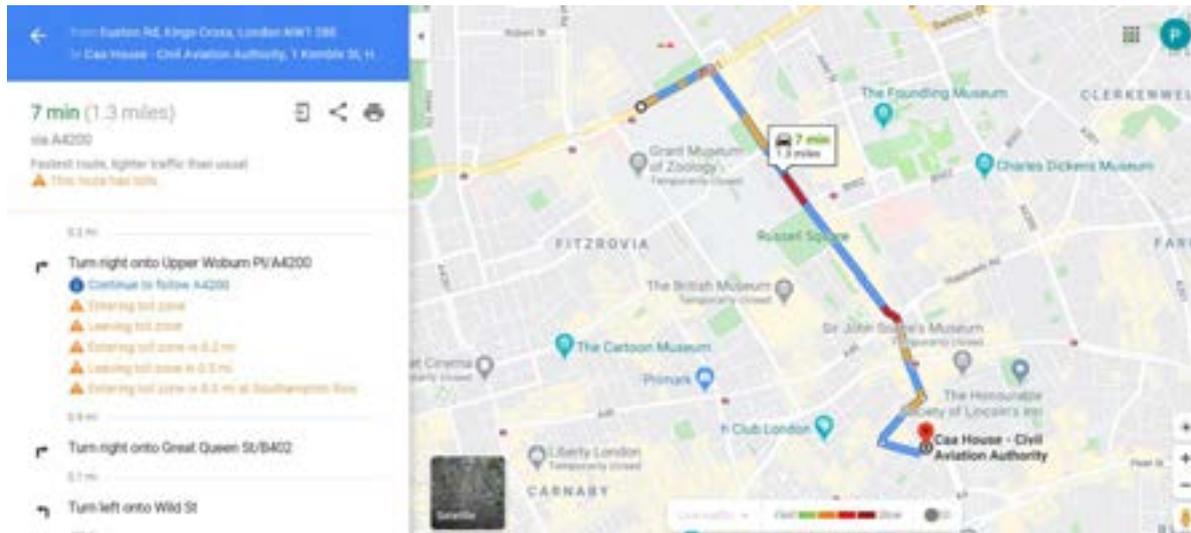
Following neighbourhood consultation, the access and egress shown below is proposed as the primary route for the majority of vehicles.

A trial drive of the new access and egress route has been undertaken. This can be found in Appendix C

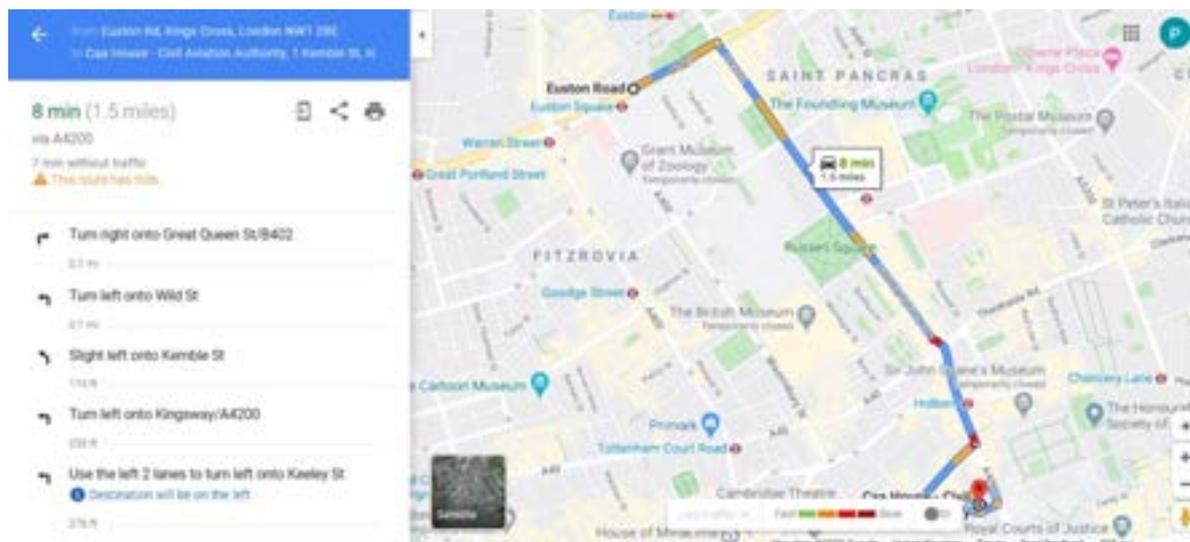




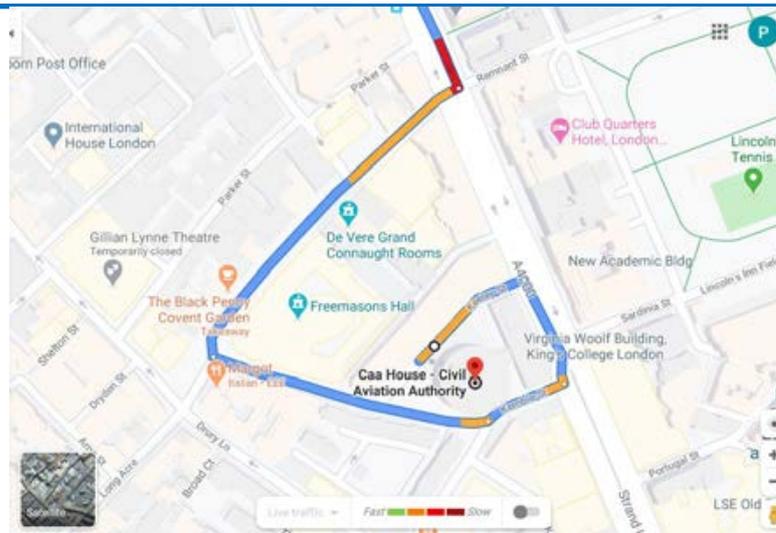
### Proposed Alternative Vehicle Routes to and from Site



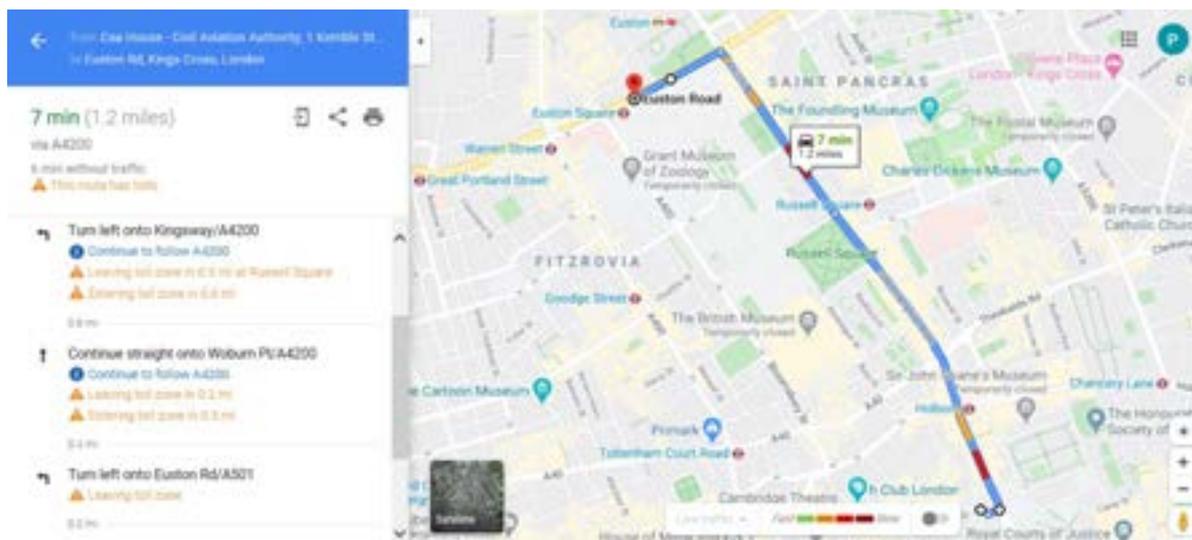
Alternative 1 - Vehicle access route to Gate 1 (Via A501)



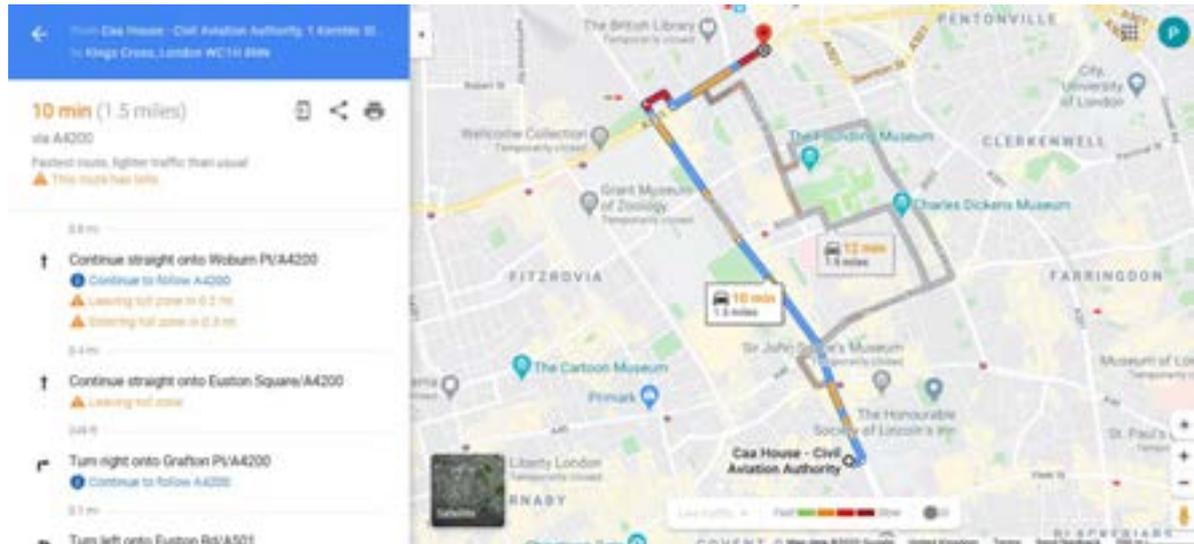
Alternative 1 - Vehicle access route to Gate 3 (Via A501)



Alternative 2 - Vehicles access route to Gate 3 (Via A501)



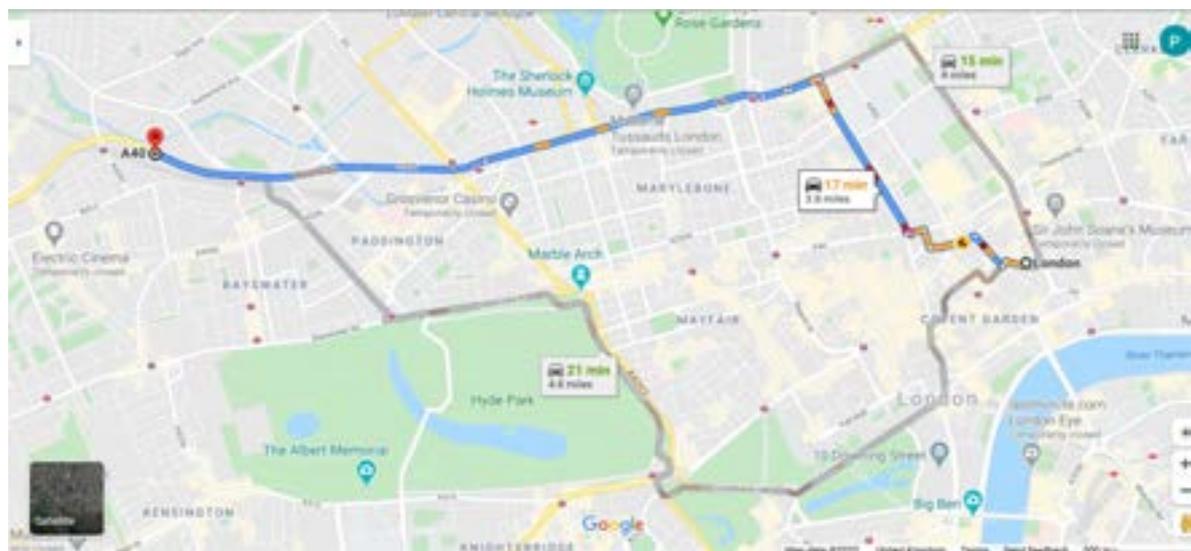
Primary Egress Route 1 - A501 (West Bound)



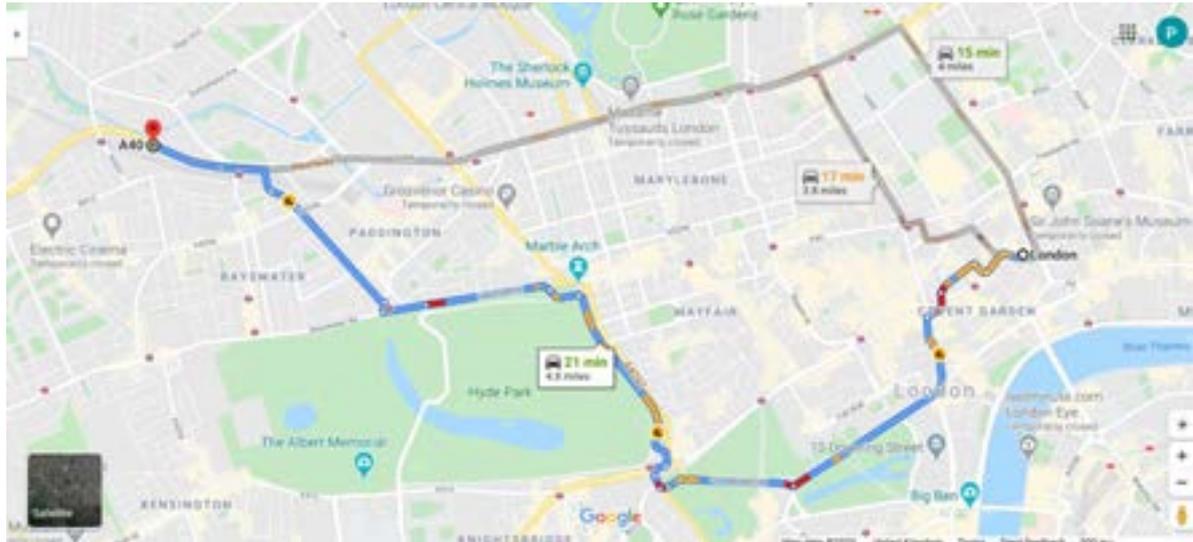
Alternative Egress Route 1 – A501 (East Bound)

**Vehicle access to site – Abnormal loads and alternative routes due to local incidents:**

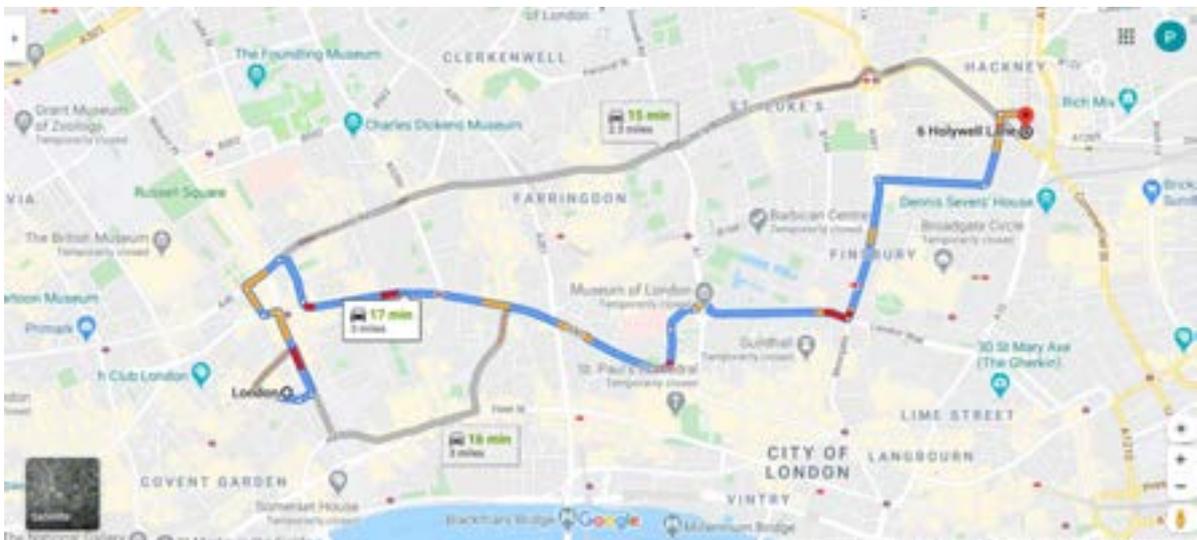
These are only to be used in the event of an abnormal load attending site or as direct by metropolitan police movement order. Routes can also be used in the event of highway works or incidents affecting the routes shown above



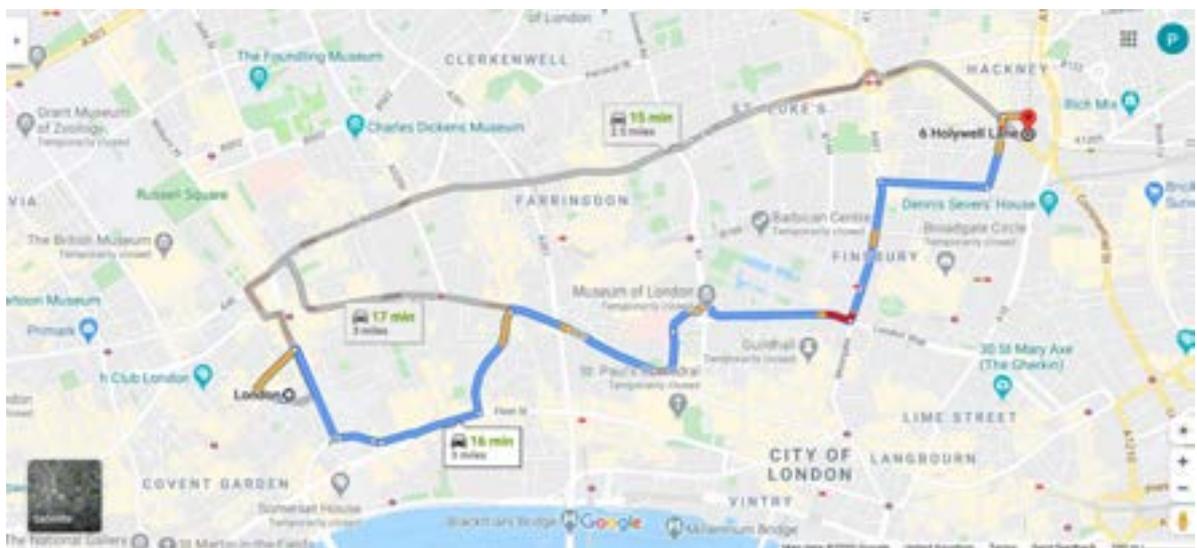
Alternative Access/Egress Routes - (West Bound)



Alternative Access/Egress Routes - (West Bound)



Alternative Access/Egress Routes - (East Bound)



Alternative Access/Egress Routes - (East Bound)

## 5. Site Logistics

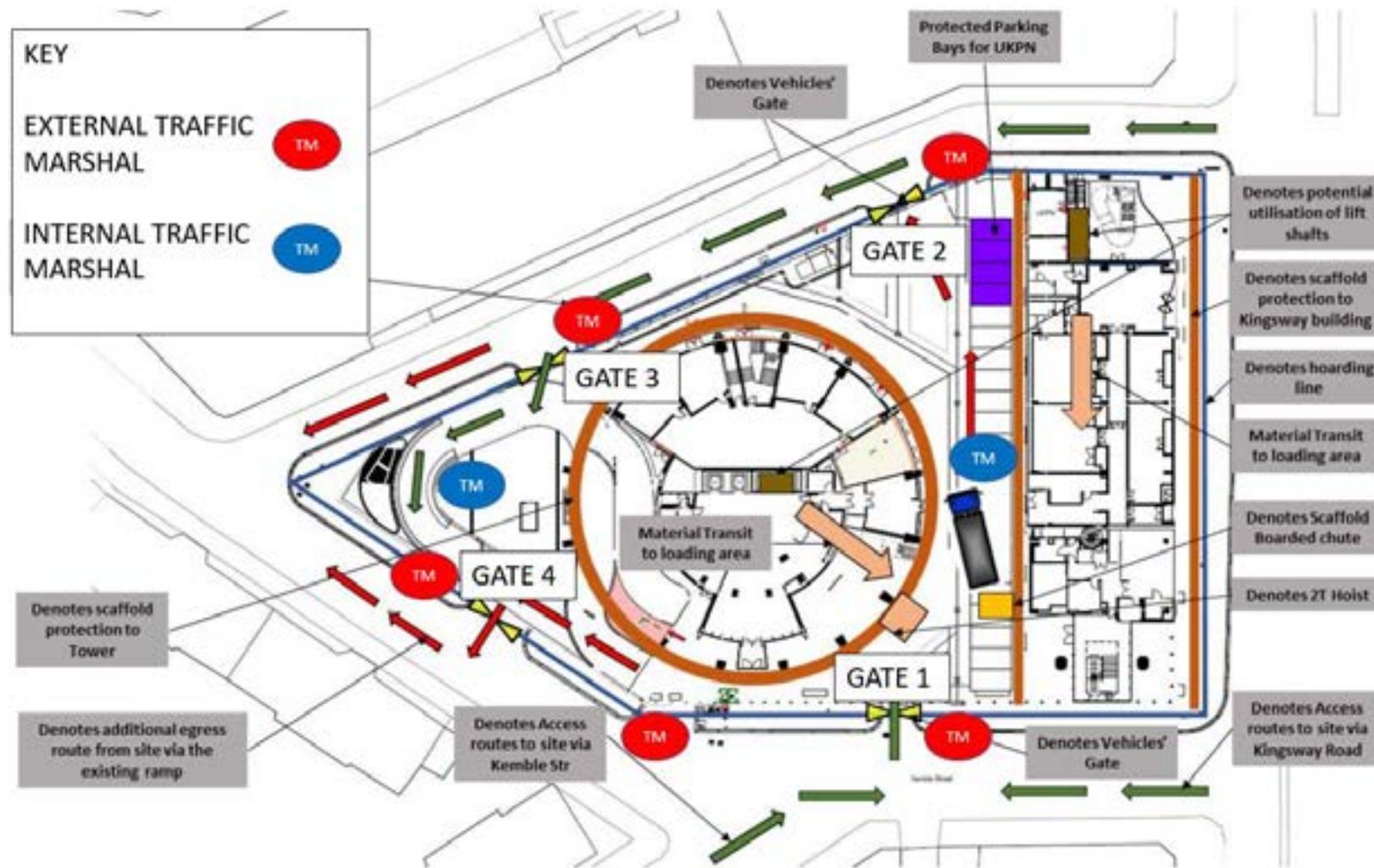
Erith will erect a site boundary hoarding compliant with Camden Borough's code of construction practice within which we intend to carry out soft strip, demolition and basement works. Due to the logistical constraints of the site all loading and unloading will have to be completed within the site confines.

Any access and egress to and from the loading area will be controlled by dedicated traffic marshals, they shall control traffic and pedestrian movement on all boundaries of the site where necessary while 8 wheel rigid back HGVs enter and exit the loading zones. Traffic Marshal presence on the road will be between 3 and 5 men dependant on what gates are in use.

Pedestrians will enter the site confines through a pedestrian access door in the site hoarding on Wild St elevation. This will provide access to a green routed area to the welfare located initially within the ground and 1<sup>st</sup> floor. Welfare may relocate to anti-vandal cabins based within the site.

All vehicles will be directed on and off the site by trained and experienced Traffic Marshals. Speed will be limited to 5mph in these locations and there will be marked routes for vehicles and pedestrians.

In the event of revisions to this TMP, Camden Council will be consulted on the required changes and await agreement prior to implementation.



## 6. Materials

The following table outlines the type and approximate quantities of materials that will be brought to or removed from site during the works.

Week Number	Description	To/ From site	Quantity Loads/ lorry	Maximum Vehicles per day
1-2	Site set up materials	To	8	2
3-26	Soft strip	From	120	5
3-20	Asbestos removal	From	20	2
8-22	Structural openings	From	30	4
22-33	Slab removal L17,16 and 15	From	50	6
8-20	Steel propping	To	10	1
2-25	Scaffold Deliveries	To	50	2

## 7. Vehicles

Erith Contractors Ltd are aware of the constraints of the site and will install and adhere to the described logistics regime to cope with them in a manner that ensures that the safety of our neighbours and the general public remains paramount and that the effects on their day to day activities are minimal. The Mayor of London's Transport Strategy (2018) *will be considered and followed throughout the works.*

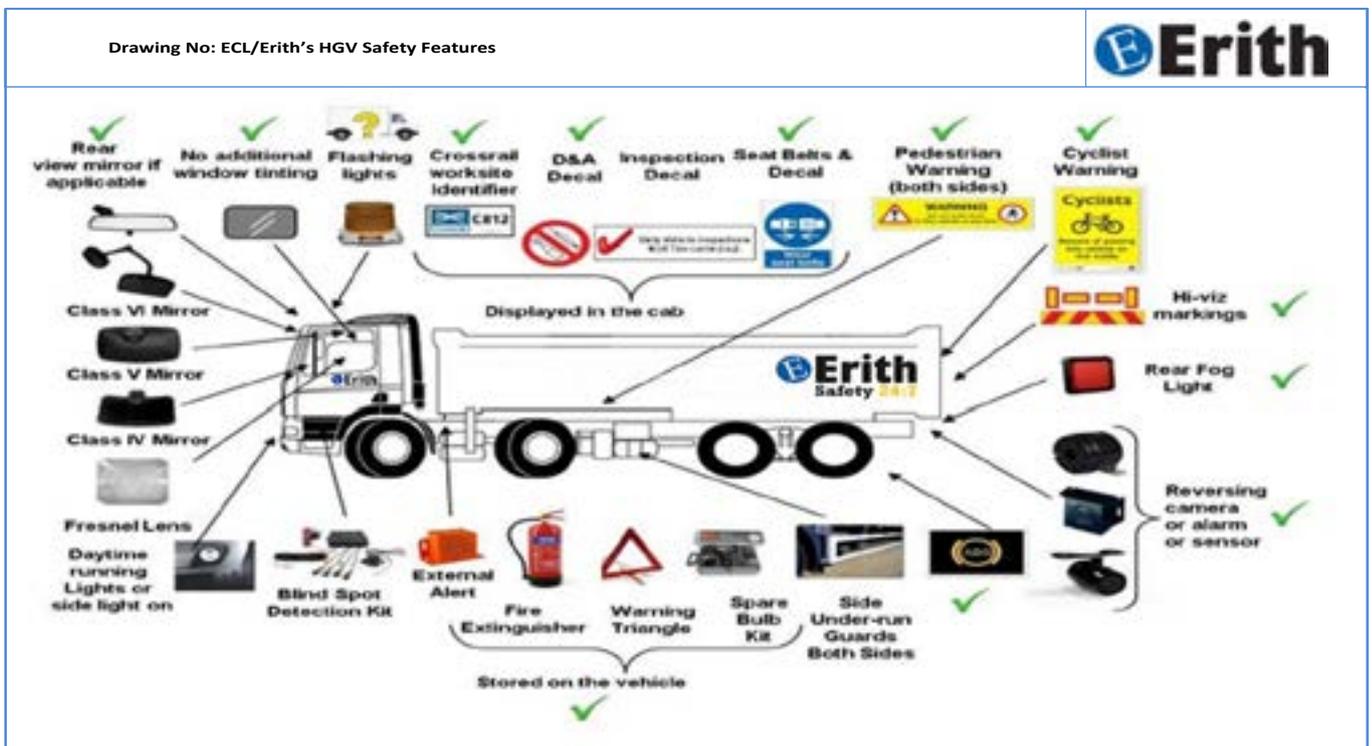
Management of vehicles on site will be in accordance with HSG144 and INDG199, observing that all site plant/vehicles are banked by a trained banksmen and signs indicating vehicle routes are posted on site. All drivers will be issued with a copy of the traffic route plan prior to coming to site and will receive a traffic management induction at Erith's haulage yard prior to attending site.

All vehicles attending site that are in excess of 3.5t attending site will be FORS (Freight Operators Recognition Scheme) compliant and will be checked for compliance by our security gatemen. All vehicle attendances to site will be pre booked at minimum 24hrs before arrival via the ECL logistics Manager.

Erith Contractors Limited prides themselves on having plant and vehicles at the pinnacle of the safety industry. All Erith's HGV's are fitted with Fresnel lenses, side scan equipment which results in an audible beep when a cyclist is on the left inside space. Under run guards are also fitted to prevent cyclists from coming into contact with lorry wheels as well as a number of other safety features (see 'Erith's HGV Safety Features' drawing below). All Erith's vehicles are also Crossrail compliant. In addition to these features to help monitor and improve the transports environmental impact Erith have installed Driver behaviour tracking systems which allow the monitoring of acceleration, braking and speed. This system allows reports to be generated along with weekly overviews from Scania which detail fuel consumption and carbon dioxide emissions.

The following plant and vehicles will be utilised on this project:

Plant	Number of	Emissions data	Description
Tipper Lorries	5-10 per day	TBA	For removal of hardcore arisings
Roll on off Lorries	5 per day	TBA	For removal of soft strip materials
Boat Skip Lorries	* If required	TBA	For removal of site welfare waste
40' Rigid lorries	1 per month	TBA	For steel deliveries
Low Loader	1 per week	TBA	For delivery of heavy plant listed below



- Every vehicle movement will be controlled by 2no trained and qualified vehicle marshals.
- All staff shall use the established site pedestrian routes.
- Vehicles will not be allowed to queue on the highway.

## 8. Parking Arrangements/Alternative Travel Arrangements

Due to the location of the site all operatives will arrive by vehicle or the Public Transport system. Parking on site will be restricted and kept to a minimum.

There are 4 allocated UKPN parking bays within the site that will remain active.

### Alternative arrangements

The nearest underground Train Stations are:

Covent Garden  
Holborn  
Temple



## 9. Risk Assessments

1. Material Transport & Traffic Management
2. Working Next to Live Traffic
3. Loading and Unloading of Roll On/Off Skip Handler
4. Operations which could present a hazard to the public and third parties

RISK ASSESSMENT - PART A										
Site Location	Space House			Date of Assessment	18/05/2020			Assessed by	Paul Millar	
Contract No	D10009			Description of Work Assessed						
Vehicle Movement										
1.	3	5	15	E, CN, VS	<p><b>Hazard:</b> Material Transport &amp; Traffic Management</p> <p><b>Risk:</b> Possible physical injury, Collision, mud left on roads</p>	<p><b>Controls:</b></p> <ol style="list-style-type: none"> <li>1. Ensure that all tippers are banked, load and sheet tippers as per regulations.</li> <li>2. Segregate vehicle and pedestrian traffic.</li> <li>4. Vehicles and plant to be fitted with reversing alarm / flashing amber beacon.</li> <li>5. Ensure that all vehicles use the Traffic Movement Plan.</li> </ol> <p><b>Extent to which they control the risk:</b></p> <ol style="list-style-type: none"> <li>1. Helps to avoid collision with objects, vehicles and personnel.</li> <li>2. As above. Reduces the risk of impact injury occurring.</li> <li>3. Prevents contamination of surrounding road surfaces and potential for vehicles to skid on possible muddy surfaces.</li> <li>4. Will make others aware of the presence of danger.</li> </ol>	1	5	5	
2.	4	5	15	E, PB	<p><b>Hazard:</b> Working Next to Live Traffic. Being struck by road traffic Work equipment/loads striking traffic or pedestrians</p> <p><b>Risk:</b> Physical Injury/Death</p>	<p><b>Controls:</b></p> <ol style="list-style-type: none"> <li>1. Ensure that all operatives are trained in the dangers of live traffic work.</li> <li>2. Ensure that the code of practice for safety at street works and road works is adhered to.</li> <li>3. Use buffer zones/safe areas wherever possible.</li> <li>4. Ensure that all operatives show consideration to all passers-by.</li> <li>5. Ensure that all dangers to the public are minimised, especially at the end of each working period.</li> <li>6. PPE to include safety footwear and always a high-visibility jacket/vest to BS EN 471.</li> <li>7. Ensure that PPE is correctly worn and regularly laundered.</li> </ol> <p><b>Extent to which they control the risk:</b></p> <ol style="list-style-type: none"> <li>1. Operatives should be aware of the risks and work safely.</li> <li>2. Will ensure that a safe system of work is in operation.</li> <li>3. Reduces the risk of impact injury to operatives should vehicles enter the work area.</li> <li>4. Helps ensure work activities will not affect 3rd parties.</li> <li>5. Will help reduce the risk of 3rd party injury.</li> <li>6. Will reduce the risk of foot injury and increase the visibility of operatives to traffic as well as protecting operatives from adverse weather conditions.</li> <li>7. Ensures that PPE remains highly visible.</li> </ol>	2	2	4	

RISK ASSESSMENT - PART A											
Site Location	Space House			Date of Assessment	18/05/2020			Assessed by	Paul Millar		
Contract No	D10009			Description of Work Assessed						Vehicle Movement	
<b>3.</b>											
<b>Hazard:</b> Loading and Unloading of Roll On/Off Skip Handler  <b>Risk:</b> Crushing of personnel Tipping of vehicle Contact with overhead services Falling objects	4	5	20	E, CN, VS, PB, YP	<b>Controls:</b> 1. Clear area for joint length of truck and skip plus 3 metres. 2. Ensure unnecessary personnel clear of work area. 3. Truck in line with laden skip before loading. 4. Ensure maximum sideways slope of 5 degrees. 5. Position skips to be recovered away from overhead cables. 6. Level loads prior to recovery. 7. Loads to be sheeted. 8. Operatives to wear head protection outside of cab. 9. Use banksman when reversing.  <i>Extent to which they control the risk:</i> 1. An exclusion zone will keep persons away from falling objects / swinging load. 2. Will keep persons away from falling objects / swinging load. 3. Helps prevent skip from swinging. 4. Reduces risk of vehicle overturning. 5. Reduces risk of electrocution. 6. Reduces risk of objects falling from skip. 7. Reduces risk of objects falling from skip. 8. Will help to protect against falling or flying debris. 9. Helps to avoid collision with objects, vehicles and personnel.	4	1	4			
<b>4.</b>											
<b>Hazard:</b> Operations which could present a hazard to the public and third parties. i.e. Demolition/traffic movement close to public footpaths  <b>Risk:</b> Injury to the public or third party	5	4	20	E, YP, PB, VS, CN	<b>Controls:</b> 1. Site boundaries to be guarded using Heras fencing, hoarding etc. 2. Warning notices to be displayed around exclusion zone and site boundaries. 3. Screens, debris netting to be used where required. 4. Induction training and PPE to be provided for all visitors to site. 5. Safe working practices to be employed. 6. Banksman to be used for controlling traffic movements and to marshal pedestrian traffic past exclusion zones. 7. Banksmen to pause work for passers by where necessary. 8. Constant interface between the public/local residents. 9. Observe any temporary closures of footpaths. 10. In highly sensitive areas escort the public past exclusion zones, log names, dates and times.  <b>Extent to which they control the risk:</b> 1. Will help prevent unauthorised access on to site. 2. Will warn people outside the site of the dangers within. 3. Will help protect from debris/dust. 4. Induction training and PPE to be provided for all visitors to site. 5. Will inform of the dangers on site before gaining access. PPE will help prevent injury. 6. Will help reduce accidents and unnecessary discharge of dusts/fumes. 7. Will reduce likelihood of impact with member of the public. 8. Will help in monitoring hazards from the site. 9. Will help control the work sequence and allow for safer working practices. 10. Will help control and monitor the flow of pedestrian traffic and any possible spurious claims for compensation through injury from the work process.	4	1	4			

Risk Matrix – To be used to determine the degree of risk for each hazard i.e. 'how bad and how likely'						
0 = Impossible/No Injury/No risk	Severity of Harm					
Probability of Harm	0 = No Injury/Affect	1 = Minor	2 = Moderate	3 = Serious	4 = Major	5 = Catastrophic
0 = Impossible	No Risk	No Risk	No Risk	No Risk		
1 = Improbable	No Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
2 = Remote	No Risk	Low Risk	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk
3 = Possible	No Risk	Low Risk	Moderate Risk	Moderate Risk	Substantial Risk	Substantial Risk
4 = Probable	No Risk	Moderate Risk	Moderate Risk	Substantial Risk	Substantial Risk	Extreme Risk
5 = Likely	No Risk	Moderate Risk	Moderate Risk	Substantial Risk	Extreme Risk	Extreme Risk

Probability Classification (P)	Severity Classification (S)	Degree of Risk (PxS)	Persons Affected
0 = Impossible	0 = No injury / affect	0 = No risk	E = Employee
1 = Improbable – Very low probability of such an event occurring.	1 = Minor – Minor accident, resulting in no injuries or lost time, little or no damage to property or the environment.	1 to 5 = Low Risk – ensures controls are adhered to and activity need not alter	CN = Other Contractors
2 = Remote – Would rarely occur.	2 = Moderate – Potential injury necessitating less than 3 days off work, damage to property or the environment requiring remedial work.	6 to 10 = Moderate Risk – tolerable, but efforts should be made to reduce the risk where cost effective and reasonably practicable.	VS = Visitors to Site
3 = Possible – May occur on occasions.	3 = Serious – Accident reportable under RIDDOR 95, serious damage to property or the environment.	11 to 15 = Substantial Risk – all practicable measures must be taken to reduce the level of risk, tolerable only where risk reduction is impracticable or disproportionate to the risk involved.	PB = Member of the Public
4 = Probable – Could occur frequently.	4 = Major – Accident resulting in serious or permanent injury, major or permanent damage to property or the environment.	16 -25 = Extreme Risk – Unacceptable except in extraordinary circumstances, all control measures must be taken regardless of cost.	YP = Young Person
5 = Likely – Very likely to happen unless activity prevented.	5 = Catastrophic – Accident resulting in death or severe disablement, destruction of property, irreversible damage to the environment.		

## 10. Further Recommendations

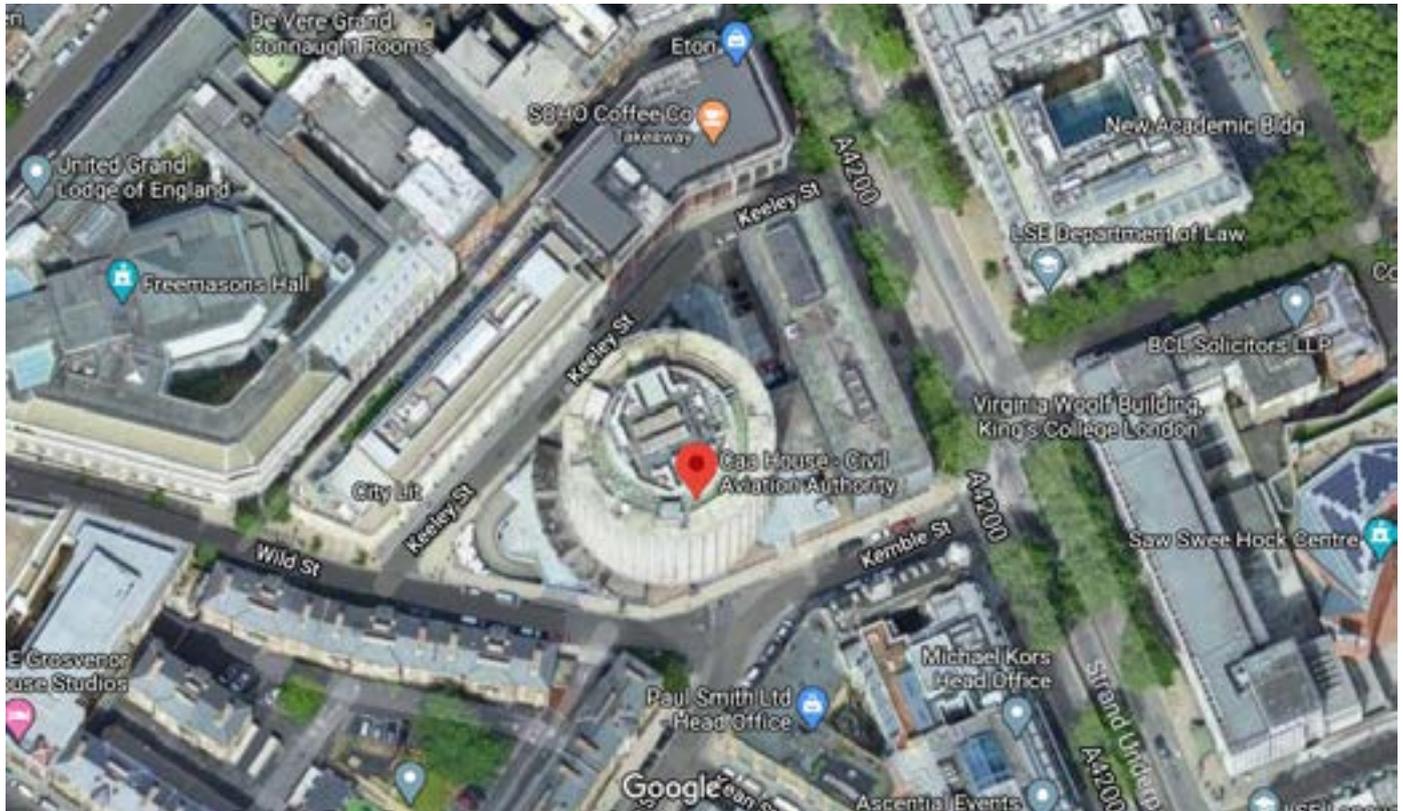
This Traffic management plan is a preliminary document to assist with planning officials understanding of our approach to the works. It will need to be refined to suit the needs of TfI and the local highways managers. Up and coming highway and utility works may affect the routes defined and alternatives will need to be considered.

The document will remain active and will evolve as the planning process develops. Revisions and updates will need to be incorporated if there are any major changes to the size and type of machinery working on site or if there are any changes to any processes that may incur a significant rising of the level of risk from traffic and or traffic management.

- All vehicle marshals will wear orange hi-vis vests or Jackets at all times.
- All vehicle movements will be controlled by trained and qualified vehicle marshals.
- All demolition operatives shall use the established site pedestrian routes.
- All operatives will be trained in the dangers of working next to live traffic.
- All people entering and leaving the site will be required to log in and out.
- The code of practice for safety at street works and road works will be adhered to.
- All signage will confirm to Chapter 8 TRSGD and SSWRW codes of practice.
- All operatives will show consideration to all passers-by.
- All dangers to the public are minimised especially at the end of each working day.
- Vehicles will not be allowed to queue on the highway (Holding area only when approved with TFL).
- At no time will ECL vehicles exceed 5mph within the site.
- All tippers will be banked, loaded and sheeted as per regulations.
- A road sweeper and/or a hose will be available at the entrance of the site to prevent the spread of any mud\debris onto surrounding roads.

Management of vehicles on site will be in accordance with HSG144 and INDG199, observing that all site plant/vehicles are banked by a trained banksman and signs indicating vehicle routes are posted on site. All drivers will be issued with a copy of the traffic route plan prior to coming to site and will receive a traffic management induction at Erith's haulage yard prior to attending site.

## Appendix A – Aerial Site View



## Appendix B – Swept Path Analysis

## Appendix C – Test Drive of New Access and Egress Route

Erith Contractors

# Appendix F

Environmental Management Plan  
&  
Noise Dust Vibration Plan



## 1 KEMBLE STREET, WC2B 4AN LONDON



## NOISE, VIBRATION AND DUST MANAGEMENT PLAN

Ref: 20887.L1

For:

Erith Contractors Ltd.

# CONTENTS

1.0	INTRODUCTION .....	3
2.0	NOISE, VIBRATION AND DUST ELEMENTS .....	3
2.1	Noise .....	3
2.2	Vibration .....	3
2.3	Dust.....	4
3.0	CRITERIA FOR NOISE, VIBRATION & DUST.....	4
3.1	Criterion for Noise .....	5
3.2	Criterion for Vibration.....	6
4.0	NOISE, VIBRATION AND DUST MONITORING.....	9
5.0	EQUIPMENT .....	9
6.0	DATA HANDLING & MANAGEMENT .....	10

## 1.0 INTRODUCTION

KP Acoustics Ltd, 1 Galena Road, London, W6 0LT, has been commissioned by Erith Contractors Ltd. to prepare an environmental management plan for noise, vibration and dust monitoring exercise which will be undertaken at The Space House, 1 Kemble Street, Holborn, London WC2B 4AN.

The main motivation for the generation of this document is to have a concise list of all noise, vibration and dust parameters which are to be monitored, in parallel to the theory and methodology underlying all on-site monitoring operations.

## 2.0 NOISE, VIBRATION AND DUST ELEMENTS

### 2.1 Noise

The effects of noise on all neighbouring premises can be varied and complicated. In extreme cases they would be likely to include a sensation of loudness, potential interference with speech communication, disturbance of work or leisure, and disturbance of sleep. A complicating factor is that, in any neighbourhood, some individuals will be more sensitive to noise than others.

In order to assess instantaneous noise levels at any time, the instantaneous A-weighted sound pressure level,  $L_{pA}$  can be used. This will give an indication of the loudness and degree of speech interference from noise.

The most commonly used descriptor, however, is the equivalent continuous A-weighted sound pressure level,  $L_{Aeq,T}$ . The time period involved should always be stated as the figure is a mathematical average of the all individual contributions of various sources during the reference period T. When assessing noise from individual events that may not always be present during a longer period  $L_{Aeq}$ , it can be useful to use a short reference period (e.g. 5min). As an alternative descriptor, the maximum sound pressure level,  $L_{A(max)}$ , or the one percentile level,  $L_{A01}$ , may be used.

With regards to noise levels, it is proposed that the absolute limit would be determined in accordance with BS5228-1:2009 and would be subject to the results of noise baseline survey.

### 2.2 Vibration

The assessment of sensitivity to vibration at different times of the day is far more complex than sensitivity to noise. The sensitivity of the human frame to vibration varies according to the axis of vibration relative to the human body (e.g. x, y or z axis) and to the frequency of vibration. In general, except at very low frequencies, sensitivity is greater in the z axis (i.e. head to foot). When setting vibration control targets it is reasonable to assume that people will normally be sitting or standing during the day and lying down during the night.

With an impulsive source of vibration, it is usual to measure the peak value attained from the beginning to the end of a drive. It is also usual to measure in terms of peak particle velocity (P.P.V) if the risk of damage to the building is the primary concern and there is also an interest in human reaction. If the concern is purely for human tolerance, then acceleration is the preferred parameter.

Vibrations, even of very low magnitude, may be perceptible to people and can interfere with the satisfactory conduct of certain delicate activities, e.g. operating theatres, use of very sensitive laboratory weighing equipment etc.

Nuisance from vibration is frequently associated with the assumption that, if vibrations can be felt, then damage is consequently inevitable; however, considerably greater levels of vibration are required to cause damage to buildings and structures than to be perceived by the human body.

Vibrations from site activities to the neighbourhood may therefore cause anxiety as well as annoyance and can disturb sleep, work or leisure activities. As with noise, in any neighbourhood, some individuals will be more sensitive to vibration than others.

### **2.3 Dust**

Dust from construction and demolition sites can have a negative effect on the amenity of neighbouring residents. As with noise and vibration, dust and other pollutants can have a range of effects, the severity of which can vary depending upon the on the recipient as referenced in the IAQM "*Guidance on the assessment of dust from demolition and construction*".

As such, it is important that a number of mitigation measures are applied in order to minimise dust emissions from the site, in accordance with the Mayor's SPG for Control of Dust and Emissions during Construction and Demolition. Furthermore, regular monitoring may be required in order to ensure that dust levels pose no threat to the amenity of nearby recipients.

### **3.0 CRITERIA FOR NOISE, VIBRATION & DUST**

The following factors are typically used to assess the likelihood of disturbance caused by noise and vibration generating activities:

#### *Site location*

The relative location of a site in relation to noise or vibration sensitive receivers will be a determining factor. The closer a site is to sensitive premises, the higher the likelihood of complaints due to noise and vibration emanating from the site.

#### *Duration of site operations*

In general, the longer the duration of all on-site operations, the more likely it is that noise or vibration from the site will potentially be an issue. In this respect, good public relations are very important. Local residents may be willing to accept a new status of noise and vibration if they know and understand the source and the duration of all operations. It is then important that site operations are carried out according to a stated schedule.

#### *Hours of work*

For any noise sensitive premises some periods of the day will be more sensitive than others. For example levels of noise that would be intruding within a dwelling during the day would not be an issue during the night. For dwellings, times of site operation outside normal weekday working hours will need special consideration.

Noise control targets for the evening period in such cases will need to be stricter than those for the daytime and, when noise limits are set, the evening limit may have to be as low as 10 dB(A) below the daytime limit. Very strict noise control targets should be applied to any site which is to operate at night.

### *Attitude to the site operator*

It is well established that “one’s music is somebody else’s noise” and vice-versa. People's attitudes to noise are always influenced by their attitudes to the noise source itself.

Noise and vibration generated from a site will tend to be accepted more willingly by local residents if they consider that the site operator is adopting best practicable means to avoid unnecessary noise.

### *Noise and vibration characteristics*

In many cases the particular identity of noise and vibration will affect people’s judgement and appreciation of the signal itself. For example, the presence of a high-amplitude impulsive noise, accompanied by a vibration sensation would render the overall assessment slightly more onerous as “penalties” would need to be employed. These would comprise weightings to signals (e.g. 5dB(A) to a highly tonal or intermittent noise source).

## **3.1 Criterion for Noise**

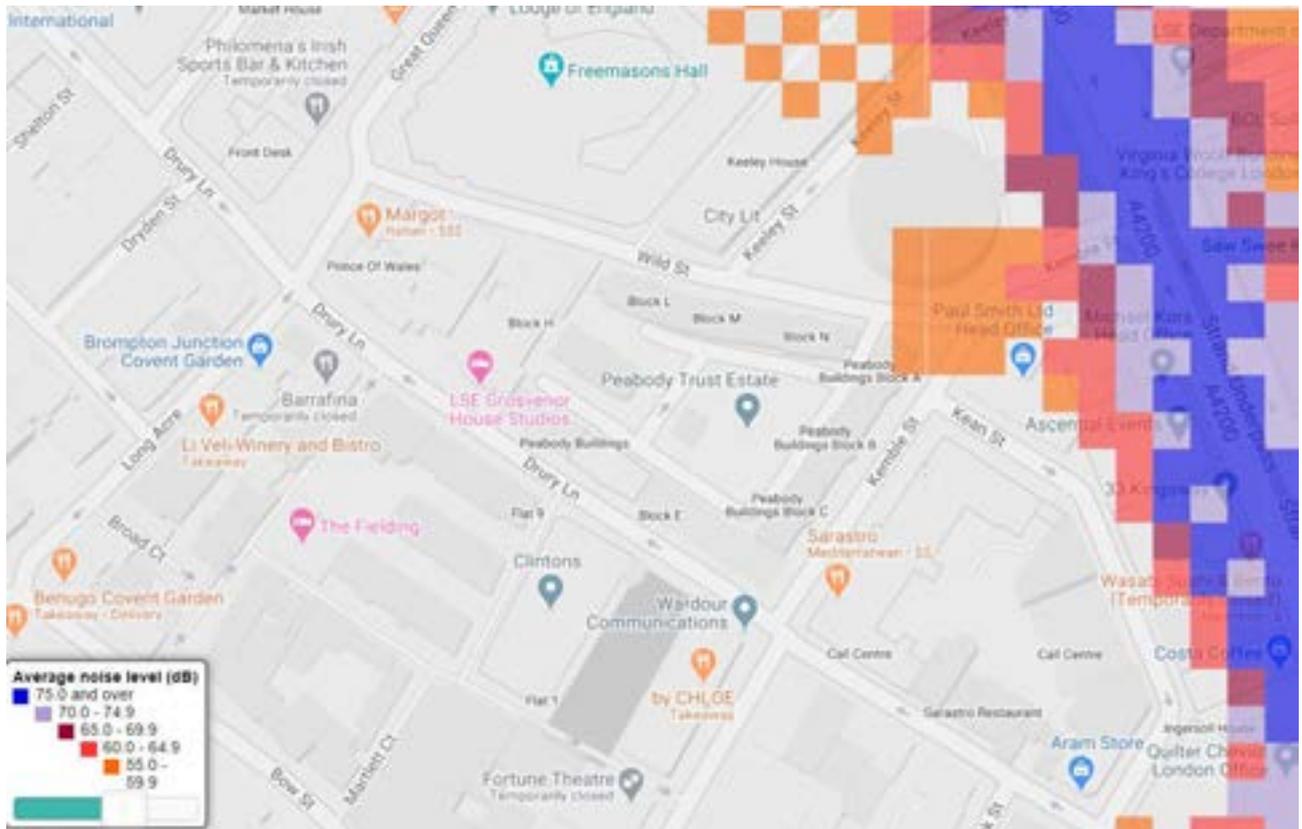
According to BS5228:2009; noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut. The noise can be measured with a simple sound level meter, as we hear it, in A-weighted decibels (dB(A))- see note below. Noise levels, between say 8.00 and 18.00 hours, outside the nearest window of the occupied room closest to the site boundary should not exceed:

- *70 decibels (dBA) in rural, suburban and urban areas away from main road traffic and industrial noise;*
- *75 decibels (dBA) in urban areas near main roads, and in heavy industrial areas*

Currently due to restrictions and lockdown caused by Covid-19, the baseline noise survey could not be organised. It is scheduled to be performed starting on 22 May 2020. On completion of the survey the report will be updated with the updated noise levels.

Based on most recent noise mapping available at <http://www.extrium.co.uk/noiseviewer.html>, the noise background daytime levels have been presented on the attached Figure 3.1.

It shows that daily  $L_{Aeq}$  levels at the façade facing A4200 are in the range of 75dB(A) while Kemble and Keeley Street oscillate between 55-65 dB(A).



**Figure 3.1: Noise Map (ref. England Noise and Air Quality Viewer extruim.co.uk)**

Based on the above, the daily noise limit from all on-site operations should therefore not exceed 75dB(A) at the closest receiver on the Keeley and Kimble Street. The front façade facing A4200 is already exposed to the noise in the range of 75dB therefore it would be recommended to set the criterion to 78dB.

Additional  $L_{Aeq,1hour}$  alert level is suggested that would be 3dB higher than the daily level. It will allow site managers to monitor and control the noise levels constantly and be proactive.

The noise criterion will need to be reviewed after a baseline survey results are available.

**3.2 Criterion for Vibration**

Vibration-induced damage can arise in different ways, making it difficult to arrive at global criteria that will adequately and simply indicate damage risk. Damage can occur directly due to high dynamic stresses, due to accelerated ageing or indirectly, when high quasi-static stresses are induced by, for example, soil compaction.

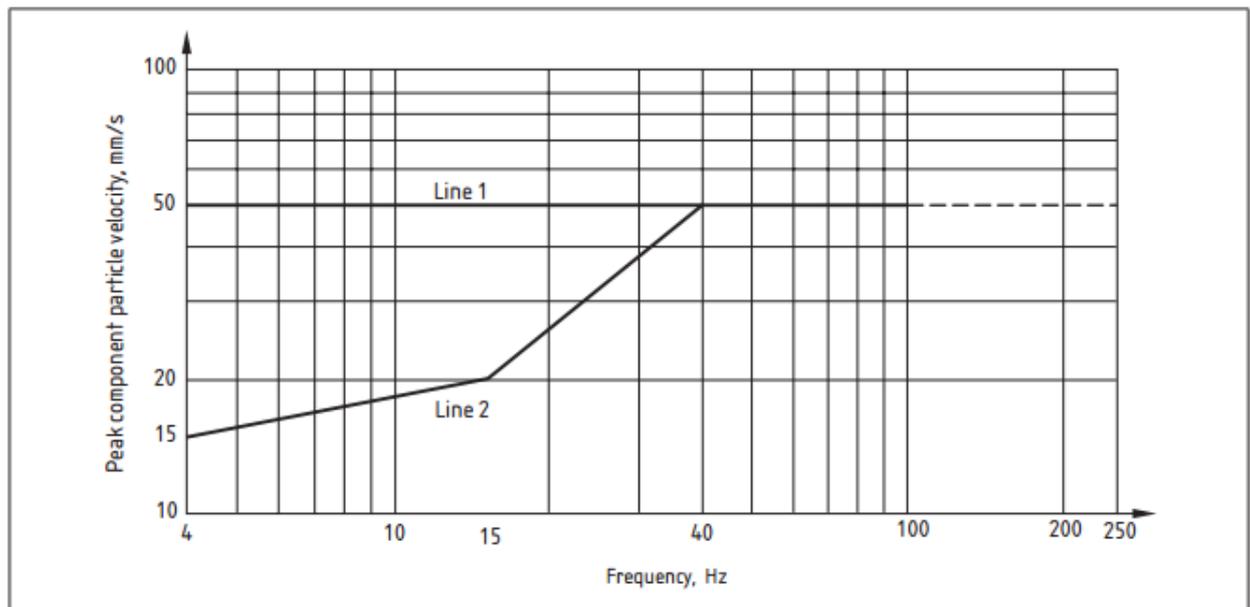
There are currently two British Standards that offer advice on acceptable levels of vibrations in structures. British Standard BS7385: Part 2: 1993 ‘Evaluation and measurement for vibration in buildings Part 2. Guide to damage levels from ground borne vibration’ gives guidance on the levels of vibration above which the building structures could be damaged. It considers only the direct effect of vibration on a building, since the other mechanisms are different.

For the purposes of BS7385 damage is classified as cosmetic (formation of hairline cracks), minor (formation of large cracks), or major (damage to structural elements). Guide values given in the Standard are associated with the threshold of cosmetic damage only, usually in wall

and/or ceiling lining materials. Since case-history data, taken alone, has so far not provided an adequate basis for identifying thresholds for vibration-induced damage, data using controlled vibration sources within buildings has been established to enable definition of vibration thresholds judged to give a minimal risk of vibration-induced damage.

Limits for primarily transient vibration, as is the case for this assessment exercise, above which cosmetic damage could occur are reported in tabular form and graphical form in the Standard and reproduced below:

**Table 4.1: Transient Vibration Guide Values for Cosmetic Damage**



**Figure 4.1: Summary of Damage Thresholds for Transient Vibration on Domestic Structures**

With respect to vibration limits, BS 5228 states:

*“It is recommended that, for soundly constructed residential property and similar structures which are in generally good repair, a conservative threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak particle velocity (P.P.V.) of 10 mm/s for intermittent vibration and 5 mm/s for continuous vibrations. Below these vibration magnitudes, minor damage is unlikely to occur. Current experience suggests that these values may be reduced by up to 50% where the preliminary survey reveals existing significant defects (such as a result of settlement) of a structural nature.”*

*“Buildings constructed for industrial and commercial use exhibit greater resistance to damage from vibrations than normal dwellings, and it is recommended that light and flexible structures ..... should be assigned thresholds of 20 mm/s for intermittent vibrations and 10 mm/s for continuous vibrations, whereas heavy and stiff buildings should have higher thresholds of 30 mm/s for intermittent vibrations and 15 mm/s for continuous vibrations.”*

BS 5228: Part 1 also states the following:

*“Vibrations, even of very low magnitude, may be perceptible to people. Vibration nuisance is frequently associated with the assumption that, if vibration can be felt, then damage is inevitable; however considerably greater levels of vibration are required to cause damage to buildings and structures.”*

The Appendix 4 - Vibration of July 2016 of the London Good Practice Guide: Noise & Vibration Control for Demolition and Construction, states and set vibration levels that has also been taken into consideration to set threshold and trigger levels:

*“Typically, vibration generated as a result of construction has the potential to result in either:*

- *Damage to adjacent buildings*
- *Disruption to building occupants within adjacent buildings*
- *Interference or damage to vibration sensitive activities / equipment*

*Building occupants can be disturbed by vibration at levels appreciably less than that which would result in building damage. Therefore, in the absence of any other restrictions, to minimise disruption to building occupants, the following upper vibration guidance levels, as measured at the worst-affected floor of the relevant property, are recommended to provide an initial indication of the risk of disturbance:*

- *1 mm/s Peak Particle Velocity (PPV) for occupied residential and educational buildings*
- *3 mm/s PPV for occupied commercial premises where the activities are not of an especially vibration sensitive nature or for potentially vulnerable unoccupied buildings*
- *5 mm/s PPV for other unoccupied buildings”*

Based on provided Outline Methodology for the Enabling Works to Space House, the majority of demolition works are undertaken at higher floors of the building. The vibration generated by those activities should not affect surrounding structures and its residents.

The demolition and breaking works at the ground level may have impact on the surrounding structures, therefore it would be recommended to monitor vibration caused by those activities.

The site and its activities are separated from the closest sensitive receivers by public roads. The vibration measured at the site boundary will be much higher than the levels *“measured at the worst-affected floor of the relevant property”*.

In the absence of possibility of installing the vibration monitors at the closest sensitive receivers the locations should be within the site boundary.

**On consideration of all the above, the following criterion has been recommended:**

**3 mm/s P.P.V amber level limit**

**5 mm/s P.P.V as red level the demolition contractor should stop work**

Below these vibration magnitudes, minor damage is unlikely to occur. Current experience suggests that these values may be reduced by up to 50 % where the preliminary survey reveals existing significant defects (such as a result of settlement) of a structural nature, the amount of the reduction being judged on the severity of such defects. The range of frequencies excited by piling operations in the soil conditions typical in the United Kingdom is between 10 Hz and 50 Hz.

### **3.2 Criterion for Dust**

The supplementary planning guidance (SPG) of Control of Dust and Emissions during Construction and Demolition from July 2014 included in London Plan 2011 Implementation Framework, states:

*“A trigger level of 250 ug m-3 is set as a 15-minute mean for concentrations of PM10 close to construction sites. This trigger level was devised from measurement near a construction site in London using TEOM measurements with a multiplier of 1.3.*

*The multiplier of 1.3 was designed to allow for the loss of volatile PM from the TEOM which would not be an issue with construction dust. The trigger level of 250 ug m-3 would approximate to 200 ug m-3 as a 15 minute mean without the multiplier.”*

**Therefore, a trigger level of PM10 200 ug per cubic meter will be set as a threshold level, and action level of PM10 250 ug per cubic meter.**

#### **4.0 NOISE, VIBRATION AND DUST MONITORING**

In order to ensure that the above criteria for noise, vibration and dust is adhered to throughout the demolition exercise, we would propose to undertake continuous monitoring. Automated noise, vibration and dust monitors will be located as shown in the indicate site plan 16692.SP1

The noise and vibration monitoring exercise will fully adhere to the following British Standards:

- BS 5228: Part 1: 1997: ‘Code of practice for basic information and procedures for noise and vibration control’
- BS 5228: Part 4: 1992: ‘Code of practice for noise and vibration control applicable to piling operations’
- BS 7385: 1990 (ISO 4866:1990): ‘Evaluation and Measurement for Vibration in Buildings’
  - Part 1: Guide for measurement of vibrations and evaluation of their effects on buildings
  - Part 2: Guide to damage levels from groundbourne vibration
- BS ISO 4866: 2010: ‘Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures’

#### **5.0 EQUIPMENT**

The main monitoring equipment which will be deployed on site will be the following:

- 2 Class 1 Sound Level Meter and Vibration Analyzer
- 1 Class 1 Sound Level Meter
- 2 No. PCB Triaxial Accelerometer, Type 3233A
- 2 No. PM10 Dust monitors.
- Additional Vibration PPV data logger on request.

Each monitoring station will be housed within a weatherproof box which could be fixed on the hoarding surface while allowing secure provision of power.

Suggested locations have been proposed in the attached Figures 5.1

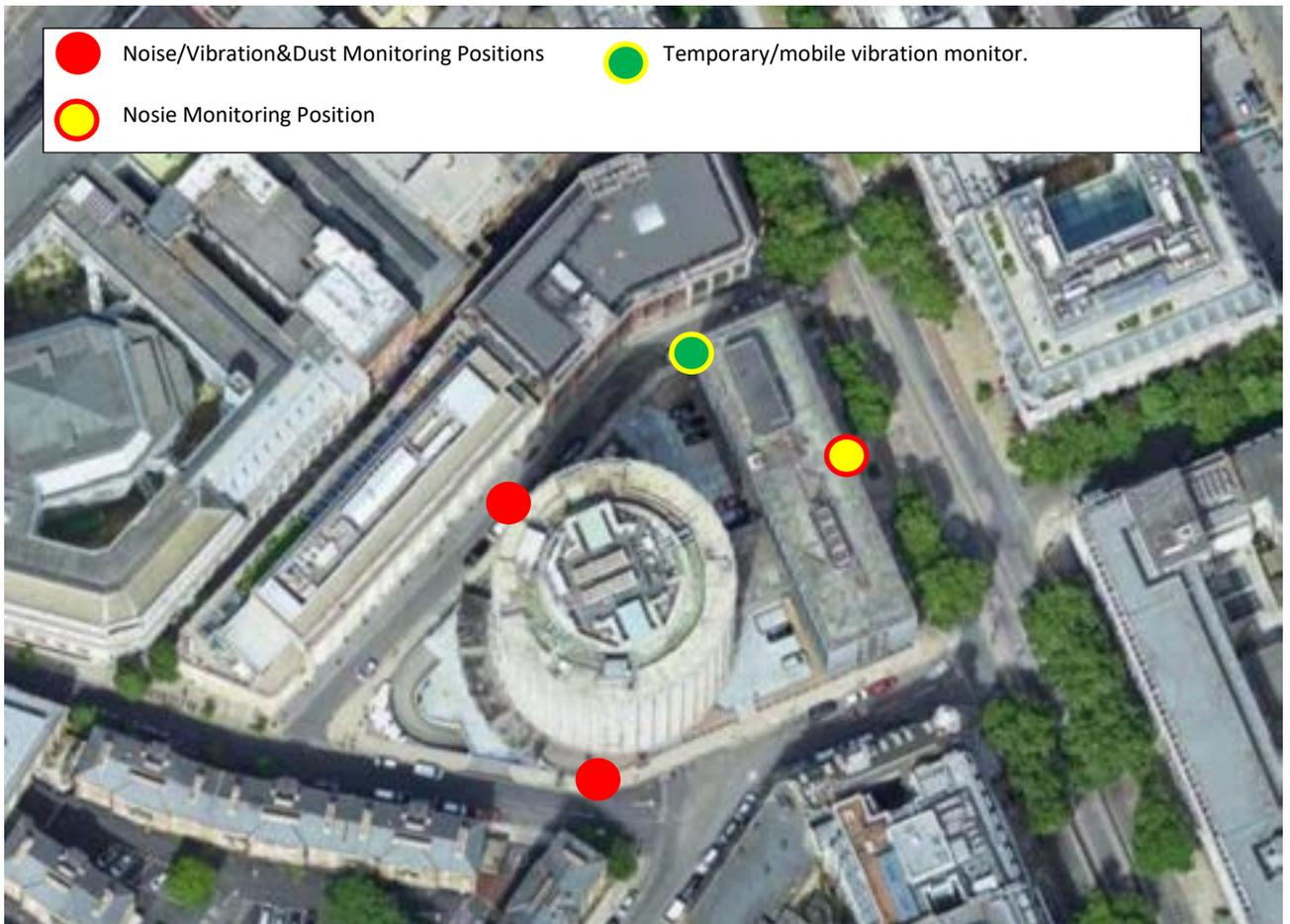


Figure 5.1: Site Plan – Indicative noise/vibration/Dust monitoring positions.

## 6.0 DATA HANDLING & MANAGEMENT

### Alert Systems

In order to ensure that the site manager and relevant parties are made aware of vibration limits being exceeded at a specific monitoring location at any time during the works, we will set up an SMS alert system which will send an SMS directly to the site manager’s mobile telephone number as soon as the threshold is exceeded. The text message will contain information on location of monitoring station and vibration level which triggered the alert.

The authorized receivers of the mentioned alerts are to be confirmed and added to the table 4.1.

Contact Name	Description	Contact number	Email address

Table 4.1 Authorized alert receivers

**Maintenance**

In order to ensure the proper operation of the on-site equipment, site visits will be undertaken at regular intervals. This will allow our qualified engineers to verify the sensitivity (in-situ calibration), general condition and performance of the equipment.

**Data Transmission**

Each monitoring station is equipped with an individual GSM modem, allowing the transmission of data wirelessly to a remote server as well as connection and configuration of the unit from a remote location. This reduces the required time on site to configure any changes to the monitoring parameters and ensures a continuous flow of data transmission even if one unit presents a fault.

Each monitoring station will have its own unique IP address for remote communication, which will be provided by a data transmitting SIM card via GSM.

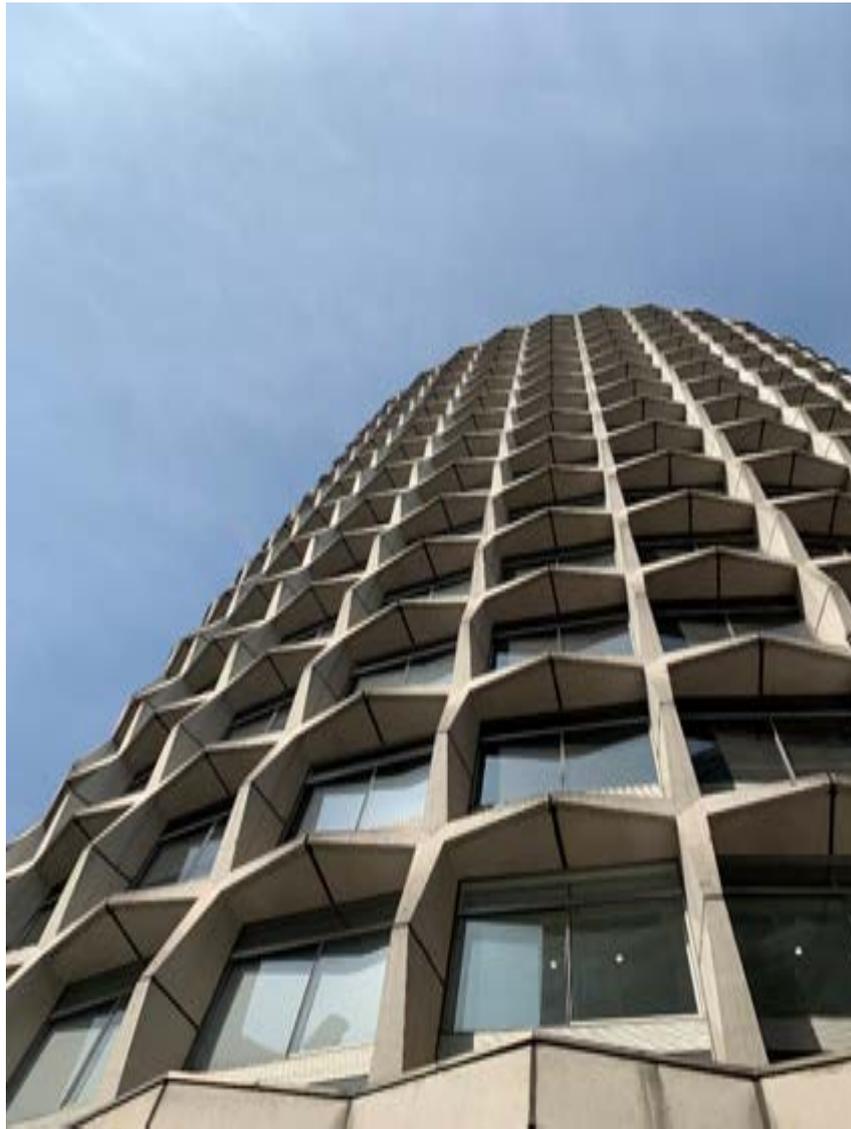
**Reporting of results**

Raw data will be collected on a secure server and treated accordingly. Login credentials will be issued to all parties with secure access to a dedicated website for this individual project. Weekly reports will historic data presented on the graphs will be forwarded to relevant parties.

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

# Environmental Management Plan

## D10009 – Space House Version 1



Issue No:	Prepared By:	Authorised For Issue By:	Comments:	Issue Date:
1.0	James Pay	Paul Millar	First Issue	05/06/20

This plan is to be maintained and updated regularly to reflect on-going changes to the management status and conditions of the project

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

## Contents

1. Introduction.....	3
1.1 Erith Environmental Management: .....	3
1.2 Project Details:.....	3
1.3 Project Contacts: .....	4
1.4 Project Overview: .....	4
1.5 Information Sources.....	5
1.6 Responsibilities.....	5
1.7 Audit and Review.....	5
2. Environmental Risk Assessment .....	6
Appendix A – Erith Environmental Policy .....	15

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

## 1. Introduction

### 1.1 Erith Environmental Management:

Erith Group's Environment Management System (EMS) sets out in detail how environment and sustainability is managed during our activities. The EMS is accredited to ISO14001:2015 and our processes are aligned with the standard's requirements. A copy of the policy is included in Appendix A.

This Environmental Management Plan (EMP) sets out the ways in which environmental impacts on the **Space House** project will be effectively controlled and minimised. All project impacts, legal, planning and client requirements will be discussed within this document.

All parties working for Erith Contractors Limited on the project will be required to meet the plan requirements.

### 1.2 Project Details:

<b>Project Name:</b>	<b>Space House</b>
<b>Project Number:</b>	<b>10009</b>
<b>Start Date:</b>	<b>May 2020</b>
<b>Completion Date:</b>	<b>January 2021</b>
<b>Project Value</b>	<b>£5 million</b>
<b>Floor Area</b>	<b>33909m<sup>2</sup></b>
<b>Site Address:</b>	<b>1 Kemble Street, London, WC2B 4AN</b>
<b>Client:</b>	<b>Seaforth Land Holdings Limited</b>
<b>Principal Contractor:</b>	<b>Erith Contractors Limited</b>
<b>Party Responsible for EMP Implementation</b>	<b>Erith Contractors Limited</b>

### 1.3 Project Contacts:

Title	Name	Phone Number	Email Address
Client	Seaforth Land Holdings Limited		
Principal Contractor	Erith Contractors Limited	03709508800	-
Operations Manager	Scott Exell	07827342239	Scott.exell@erith.com
Project Manager	Paul Millar	07584233922	Paul.millar@erith.com
Environmental Support	James Pay	07919592052	James.pay@erith.com

### 1.4 Project Overview:

The site comprises 1 Kemble Street (Space House) and 45-49 Kingsway, which are both Grade II listed. The site is situated within the London Borough of Camden.

The works at Space House consist of, but are not limited to, the strip out of both buildings and the demolition of the two uppermost levels of the tower (16 and 17).

The project is targeting a BREEAM Refurbishment 2014 Outstanding certification.

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

### 1.5 Information Sources

The following reports have informed and should be read in conjunction with this EMP:

Document ed	Author	Date
<b>Space House Strip-Out Contractor BREEAM Preliminaries</b>	Atelier Ten	January 2019
<b>BREEAM Non-domestic RFO 2014 Hit List</b>	Atelier Ten	January 2019
<b>Camden Planning Guidance</b>	Camden Council	N/A

### 1.6 Responsibilities

<b>Erith person responsible for the management of implementation, management, and review of the EMP</b>	<b>Project Manager – Paul Millar</b>
<b>Erith person responsible for implementation, management, and review of the EMP</b>	<b>Project Manager – Paul Millar</b>
<b>Erith Manager with overall responsibility for compliance with the EMP</b>	<b>Operations Manager – Scott Exell</b>

### 1.7 Audit and Review

This plan will be reviewed 6 monthly as a minimum or when activities on site have undergone significant changes, whichever is first.

Following these reviews of the EMP and associated information, the project team will be given training on the updates.

The site will undergo monthly inspections from the Environmental Manager or other member of the Erith Environmental and Sustainability team.

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

## 2. Environmental Risk Assessment

The documents described in 1.5 and Erith's own assessment of the site setting have been used to develop an Environmental Risk Assessment (ERA). The ERA will set out any risk, set out the required mitigation, assign responsibilities for the actions and highlight any associated information sources.

The environmental risks will be scored, before and after mitigation, with the following scoring system:

### Probability X Severity = Degree of Risk

Probability Classification (P)	Severity Classification (S)	Degree of Risk (PxS)
0 = Impossible	0 = No incident / effect	0 = No risk
1 = Improbable – Very low probability of such an event occurring.	1 = Minor – Minor incident, resulting in minor environmental risk and little or no damage.	1 to 5 = Low Risk – ensures controls are adhered to and activity need not alter. Review and monitor.
2 = Remote – Would rarely occur.	2 = Moderate – Potential incident where if not managed may cause damage to property or the environment requiring remedial work.	6 to 10 = Moderate Risk – tolerable, but efforts should be made to reduce the risk where practicable. Review and monitor.
3 = Possible – May occur on occasions.	3 = Serious – Incident reportable to Client and Regulator, serious damage to property or the environment.	11 to 15 = Substantial Risk – all practicable measures must be taken to reduce the level of risk, tolerable only where risk reduction is impracticable or disproportionate to the risk involved. Review and monitor.
4 = Probable – Could occur frequently.	4 = Major – Incident resulting in serious or permanent damage to the environment, major or permanent damage to property.	16 -25 = Extreme Risk – Unacceptable except in extraordinary circumstances, all control measures must be taken regardless of cost. Review and monitor.
5 = Likely – Very likely to happen unless activity prevented.	5 = Catastrophic – Incident causing long-term or irreversible and severe destruction of property and to the environment.	

Risk Matrix – To be used to determine the degree of risk, i.e. 'how bad and how likely'						
Probability of Harm	Severity of Harm					
	0 = No Affect	1 = Minor	2 = Moderate	3 = Serious	4 = Major	5 = Catastrophic
0 = Impossible	No Risk	No Risk	No Risk	No Risk		
1 = Improbable	No Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk
2 = Remote	No Risk	Low Risk	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk
3 = Possible	No Risk	Low Risk	Moderate Risk	Moderate Risk	Substantial Risk	Substantial Risk
4 = Probable	No Risk	Moderate Risk	Moderate Risk	Substantial Risk	Extreme Risk	Extreme Risk
5 = Likely	No Risk	Moderate Risk	Moderate Risk	Substantial Risk	Extreme Risk	Extreme Risk

When the detailed control measures in place are adhered to, the risks above should be reduced to an acceptable level.

The ERA is as follows:

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

Aspect	Impact	Risk Rating			Main control & mitigation measures and extent of controls	Responsibility	Mitigated Risk Rating		
		Likelihood Frequency	Harm / Danger	SCORE			Likelihood Frequency	Harm / Danger	SCORE
<b>Noise and vibration from demolition activities</b>	Disturbance of neighbours and potential action by Local Authority, programme delay.	3	3	9	Controlling Noise Procedure. - Compliance with local authority requirements and apply for Section 61 Agreements if required- Works carried out during agreed core hours only and noise within permissible limits. Best practicable means will be employed to keep the level of noise and vibration generated on site as low as reasonably practicable. - Inform occupants of nearby properties in advance of the works taking place including the duration and likely noise and vibration impacts. - Welfare facilities enclosed and self-servicing.	Erith Site Team	2	3	6
<b>Emissions to atmosphere from vehicles and plant used on site</b>	Adverse impacts of gaseous and particulate pollutants from vehicles and plant used on site and dust from construction activities.	2	4	8	-Ensuring engines of vehicles and plant on site are not left running unnecessarily. -Ensure compliance with NRMM. -Using low emission vehicles and, where required, plant fitted with catalyst. - Using ultra low sulphur fuels in plant and vehicles - Ensure plant is well maintained.	Erith Site Team	1	4	4

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<b>Creating dust nuisance from demolition and construction activities</b>	Disturbance of neighbours and potential action by Local Authority, programme delay.	2	4	8	Controlling dust and airborne pollutants using best practicable means: Key measures: - Appropriate working methods to reduce risks from wind blow including damping down the works and dust control techniques; - where required, effective wheel washing on leaving site and damping down of haul roads; - No site runoff of water or mud. - Use of water as dust suppressant; - Covering of loads - Maintain a complaints log to ensure close out of any issues	Erith Site Team	1	4	4
<b>Creating dust nuisance from delivery vehicles</b>	Disturbance of neighbours and complaints	2	3	6	All reasonably practicable measures will be put in place to avoid/limit and mitigate the deposition of mud and other debris on the highway including:- The correct loading of vehicles and sheeting of loads- The use of mechanical road sweepers combined with water sprays for the suppression of dust to clean hard standings- The flushing of gullies in the vicinity of the site.- Watching brief for "track-out" of mud from the project.	Erith Site Team	1	3	3
<b>Over-production of non-hazard waste</b>	Unnecessary increase in waste sent to landfill, fossil fuel and other energy consumption in handling and recycling	2	2	4	Resource Management Plan and Managing Waste Procedure. Key measures: - Endeavour to reuse and recycle construction and demolition wastes. - Reduce generation of waste at source i.e. not over ordering & reusing materials if/where possible. - where possible, Waste to be sorted into separated waste streams on site and recyclable waste to be sent for recycling. - Mixed construction waste to be sent to a material recycling facility for segregation and recycling - Identification of waste management sites and contractors for all waste, ensuring that the contracts are in place and requiring compliance with legal responsibilities - A commitment to undertaking waste audits to monitor the amount and type of waste generated and to determine if the targets set out in the RMP have been achieved. Targets will be reviewed and where necessary, amended. All results will be communicated to the staff.	Erith Site Team	1	2	2

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<b>Improper handling and storage of waste leading to the potential for leakage, runoff or escape of waste material into the environment</b>	Impact on a range of receptors from pollution including, water quality. Potential breach of legislative requirement to process waste	2	3	6	As above	Erith Site Team	1	2	2
<b>Classification of waste materials not correctly identified, and transfer of waste materials procedure not followed.</b>	Incorrect management of waste, failure to meet duty of care requirements	1	2	2	Resource Management Plan procedure and regular audit by the site team.	Erith Site Team	1	2	2
<b>Mixing hazardous and non-hazardous wastes</b>	Incorrect management of waste, failure to meet duty of care requirements and breach in legislative requirements.	2	2	4	Resource Management Plan and Managing Waste Procedure Key measures:- Segregation of hazardous and non-hazardous waste streams;- Appropriate disposal routes.- Appropriate Tool Box Talks.	Erith Site Team	1	2	2

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<b>Spillage of fuel due to storage facility failure</b>	Damage to building, potential contamination of land, foul sewer and freshwater.	2	3	6	<p>Managing Drainage Procedure &amp; Prevention and Controlling Spills Procedure</p> <p>Key measures:</p> <ul style="list-style-type: none"> <li>- Implement pollution prevention initiatives outlined in Spill Prevention &amp; Controlling Spills Procedure.</li> <li>- Teams briefed on safe storage of COSHH</li> <li>- COSHH assessments available to review to all project staff</li> <li>- Flammable materials stored separately</li> <li>- Gases stored away from sources of ignition</li> <li>- COSHH materials ordered by the smallest amount possible</li> <li>- COSHH stores sited well away from the potential of ground pollution</li> </ul>	Erith Site Team	1	3	3
<b>Use of non-sustainable construction materials (including equipment).</b>	<p>Depletion of natural resources. Contribution to global warming through transport emissions and emissions during construction.</p> <p>Increased waste generation through shorter life span.</p> <p>May contain more hazardous material, creating environmental hazard</p>	3	2	6	<p>The Project will ensure all timber used on site is FSC certified and recycled aggregate used throughout the construction stage.</p> <p>Internal Audit will be conducted by Environmental Team</p> <p>Comply with sustainable procurement policy</p>	Erith Site Team	1	2	2
<b>Poor material storage on-site which leads to potential degradation of materials and fugitive releases</b>	<p>Increase in wastage (landfill impact and/or energy consumption in recycling and replacement)</p> <p>Potential pollution of water courses,</p>	2	3	6	<p>Key Measures:</p> <ul style="list-style-type: none"> <li>- Site Waste Management Plan.</li> <li>- Control and Storage of Materials Oil Storage/</li> <li>- COSHH compliance.</li> </ul>	Erith Site Team	1	3	3

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

	land and habitats or air								
<b>Negligence in waste disposal on the part of our staff or our subcontractors</b>	Potential for local pollution of land and watercourses.	2	2	4	All to ensure they comply with Erith's Sustainability Policy and Duty of Care under the Environmental Protection Act 1990. Hazardous Waste (England & Wales) (Amendment) Regs 2015	Erith Site Team	1	2	2
<b>Release of chemicals</b>	Potential for contamination of land and watercourses, risk to human health	2	4	8	Regular inspection of storage containers. Improve storage conditions on site to limit escape into drains / increase bunded storage facilities. Limit volumes of chemicals on site / stock management. Limit use of chemicals on site, seek less toxic/ harmful substances wherever possible.	Erith Site Team	1	4	4
<b>Fuel spilled whilst refuelling entering drainage system, local water course, aquifer or land</b>	Potential pollution of controlled waters and ground water.	3	3	9	Comply with refuelling protocol. Ensure pollution control measures are in place – spill drills, spill kits deployed.  On-site drainage to be sealed where possible and marked up where not.	Erith Site Team	1	3	3
<b>Involvement with unregulated contractor or contractor with poor management.</b>	Potential prosecution and impacts associated with bad haulage or bad practice e.g. land contamination by fly tipping and compromising the project's environmental performance	1	2	2	Site will ensure a robust Waste Management Plan is in place and all contractors will be engaged in line with Erith procurement policy	Erith Site Team	1	2	2

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<b>Light Pollution from Site</b>	Disturbance of neighbours and complaints	1	1	1	Site Management will ensure sensitive placement of lights and lighting towers during Demolition and Construction.	Erith Site Team	1	1	1
<b>Plant and equipment breakdown and maintenance; spillage of oils and fuel</b>	Contamination of aquifers and water courses	3	2	6	Tool box talk to ensure everyone on-site is familiar with spill process. Effective and regular plant maintenance	Erith Site Team	1	2	2
<b>Excessive use of water on site</b>	Increased demand putting pressure on supply companies to source water supplies from natural systems and use a finite natural resource	2	3	6	Water supply to site will be metered. Regular tool box talks on water efficiency measures	Erith Site Team	2	2	4
<b>Discharge groundwater and rainwater to sewer</b>	Contamination of sewers esp. with silt	2	3	6	On site drainage to be marked and sealed where possible. No unapproved discharges  Discharge consent required from undertaker with agreed controls (settlement tanks, limits on quantity and metering). Induction and toolbox talk on soil and water quality;	Erith Site Team	1	3	3

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<b>Vandalism of fuel storage tanks, hazardous chemical storage facility causing large spill to enter drainage system</b>	Potential pollution of controlled water or impacts on sewerage plant	1	3	3	Robust site security arrangement in place	Erith Site Team	1	3	3
<b>Operation of construction plant - excessive use of fuel energy</b>	Depletion of finite natural resource, CO2 emissions	2	2	4	'Turn off when not in use' site rule. Plant maintenance and inspection	Erith Site Team	1	2	2
<b>Concrete washout allowed onto ground.</b>	Pollution to groundwater	2	3	6	Sub-contractor to provide concrete washout facilities and concrete pouring guidance	Erith Site Team	1	3	3
<b>Out of Hours Working: Noise and light disturbance to neighbours</b>	Nuisance to local residents	3	2	6	All out of hours working will on take place with prior agreement form the local authority and the neighbours will be notified/	Erith Site Team	1	2	2
<b>De-watering</b>	Contamination of watercourse with silt or fine particulate matter causing damage to habitat.	1	3	3	Sub-contractor to provide method statement and site controls to remove risk of uncontrolled discharge to watercourse  All discharges to have Trade Effluent consent arranged.	Erith Site Team	1	3	3

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

<p><b>Use of hazardous substances inc Paint etc: Fumes and odours from use of chemicals &amp; accidental spillage</b></p>	Impact dependent on material and method of disposal (e.g. leachates in landfill, emissions to air from incineration). Use of declining landfill space, natural resource depletion.	2	2	4	<p>Ensure where possible to use replacement non-COSHH products and consider environmentally friendly materials</p> <p>Ensure proper, bunded storage and the completion of COSHH assessments.</p> <p>Arrange suitable disposal routes.</p> <p>Staff Training: Awareness of impacts of odours &amp; use of spills kits and environmental emergency plan</p>	Erith Site Team	1	2	2
<p><b>BREEAM Targets</b></p>	Failure to meet contractual and planning requirements	3	3	9	<p>Embed requirements within operations. Regular checks and environmental inspections/reporting. Toolbox talks where relevant.</p> <p>Ensure:</p> <ul style="list-style-type: none"> <li>• Pre-demolition audit completed and complied with</li> <li>• Produce resource management plan</li> <li>• Reuse materials where possible</li> <li>• Divert 95% from landfill</li> <li>• Protect ecological features if present</li> <li>• Record construction impacts</li> </ul>	Erith Site Team	2	2	4
<p><b>Working in a listed building</b></p>	Damage to listed building leading to LA prosecution/fines	3	3	9	<p>Ensure listed building consent is in place</p> <p>Complete works in line with agreed plans and method statements.</p> <p>Toolbox talks to operatives to ensure understanding.</p>	Erith Site Team	2	2	4

Document ref:	EMP 10009	Rev:	1.0
Date of issue:	5 June 2020	Author:	JP
Ezone location	Space House 16.22.06		

## Appendix A – Erith Environmental Policy

Document ref:	Environment & Sustainability Policy	Rev:	1.9.0
Date of issue:	02/04/2019	Author:	SHEQ
Ezone Location	03.10.06		

### ENVIRONMENT & SUSTAINABILITY POLICY STATEMENT

In accordance with its duty under current environmental legislation and guidance and in fulfilling its obligations to the environment, employees, members of the public, regulators and other interested parties who may be affected by its activities: The Directors of Erith have produced the following statement of policy in respect of the environment and sustainability.

It is our aim, as a responsible organisation, to operate proactively to prevent pollution to the environment and minimise our impact on climate change and other environmental risks. To facilitate this, we will pursue continuous improvement from year to year.

We undertake to discharge our statutory duties by:

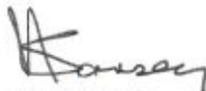
- Complying with applicable legal requirements, industry and regulator best practice and guidance and with other requirements to which the company subscribes regarding the protection of the environment.
- Implementing a sustainability focused ISO14001 certified environmental management system that allows our operations to track, report and minimise our impacts on waste, resource use, biodiversity, carbon and emissions.
- Identifying the environmental and sustainability risks of our activities and implementing appropriate preventative and protective measures that are effective, while considering new opportunities and technologies to improve our performance.
- Preventing environmental incidents through audit, inspection and reporting of "Near Miss" and environmental observations.
- Embedding sustainability in our decision making to provide sustainable solutions to the marketplace, people, community and the environment.
- Recruiting, appointing and developing personnel who have the skills, knowledge and ability to perform. We will maintain their competence through training, development and membership to corporate environmental bodies.
- Promoting environmental and sustainability awareness and good practice through effective communications, ensuring all employees are aware of their individual environmental and sustainability responsibilities.
- Building trust, ethics and integrity with our stakeholders and interested parties.
- Being diverse and inclusive while leading sustainable and ethical stewardship.
- Providing sufficient funds and resources to meet these objectives.
- Ensuring that environmental protection, sustainability and reducing our impact on climate change will not be compromised by other objectives.

All employees are encouraged to contribute actively towards achieving a working environment that is free of environmental incidents, accidents and impacts to the environment and climate, as well as share and promote opportunities where environmental risk is identified.

Our environment and sustainability policy will be reviewed annually to monitor its effectiveness and to ensure that it remains relevant and appropriate to the organisation.

This statement is to be read in conjunction with the responsibilities, arrangements, procedures and guidance that together form the environment and sustainability policy for Erith.

**Signed for and on behalf of the Executive Board:**



**Steven Darsey**  
Company Chairman  
02/04/2020

Erith Contractors

# Appendix G

NRMM



## NRMM Site Register Guidance

Non-road mobile machinery (NRMM) is defined as any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road. The Emissions requirements are only applicable to NRMM that is powered by diesel, including diesel hybrids. This must be reported to the local council.

Examples of NRMM include but are not limited to:

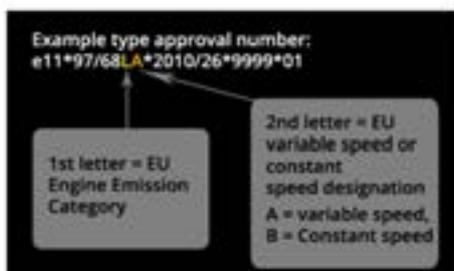
- Access platforms,
- Dumpers,
- Piling rigs,
- Excavators,
- Bulldozers,
- Forklifts,
- Compressors,
- Generators,
- Mobile Cranes,
- Concrete Pumps,
- Mobile crushers,
- Telehandlers Rollers,
- Other construction machinery,

Please complete the NRMM register Form for all of the above items of Non road mobile machinery. Once completed please submit to Erith Contractors and the information will be submitted to our online NRMM register.

### How to Read an Engine plate;

The Engine plate can usually be found within the engine bay, you may have to open the hood or open engine bays to find the Engine Plate. **(Please note engine will be hot after use try and obtain this information before machine is used too ensure safer access to the plate).**

The highlighted letter in the below code indicates the EU Emission Stage, in this example L which is a EU Stage IIIB.



Engine Category Letter	EU Emissions Stage
A-C	EU Stage I
D-G	EU Stage II
H-K	EU Stage IIIA
L-P	EU Stage IIIB
Q-R	EU Stage IV

Find example engine plates Below and where information is within the engine plates;

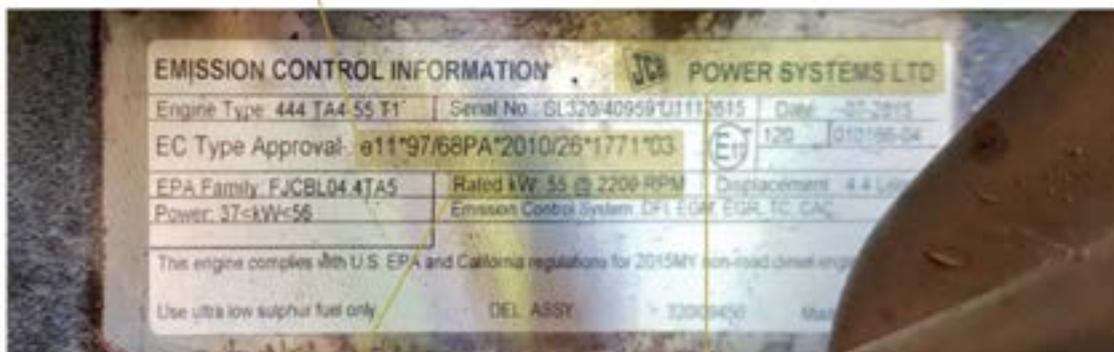


Manufacturer: Deutz

Type Approval Number:  
e1\*97/68PA\*2012/46\*0699\*04

Manufacturer	Deutz
Power Output (kW)	55.4
Type Approval Number	e1*97/68PA*2012/46*0699*04
Comments	Stage IIIB variable speed engine

Type Approval Number:  
e11\*97/68PA\*2010/26\*1771\*03



Power output: 55 Kw

Manufacturer: JCB

Manufacturer	JCB
Power Output (kW)	55
Type Approval Number	e11*97/68PA*2010/26*1771*03
Comments	Stage IIIB variable speed engine

### Non Road Mobile Machinery Register Space House

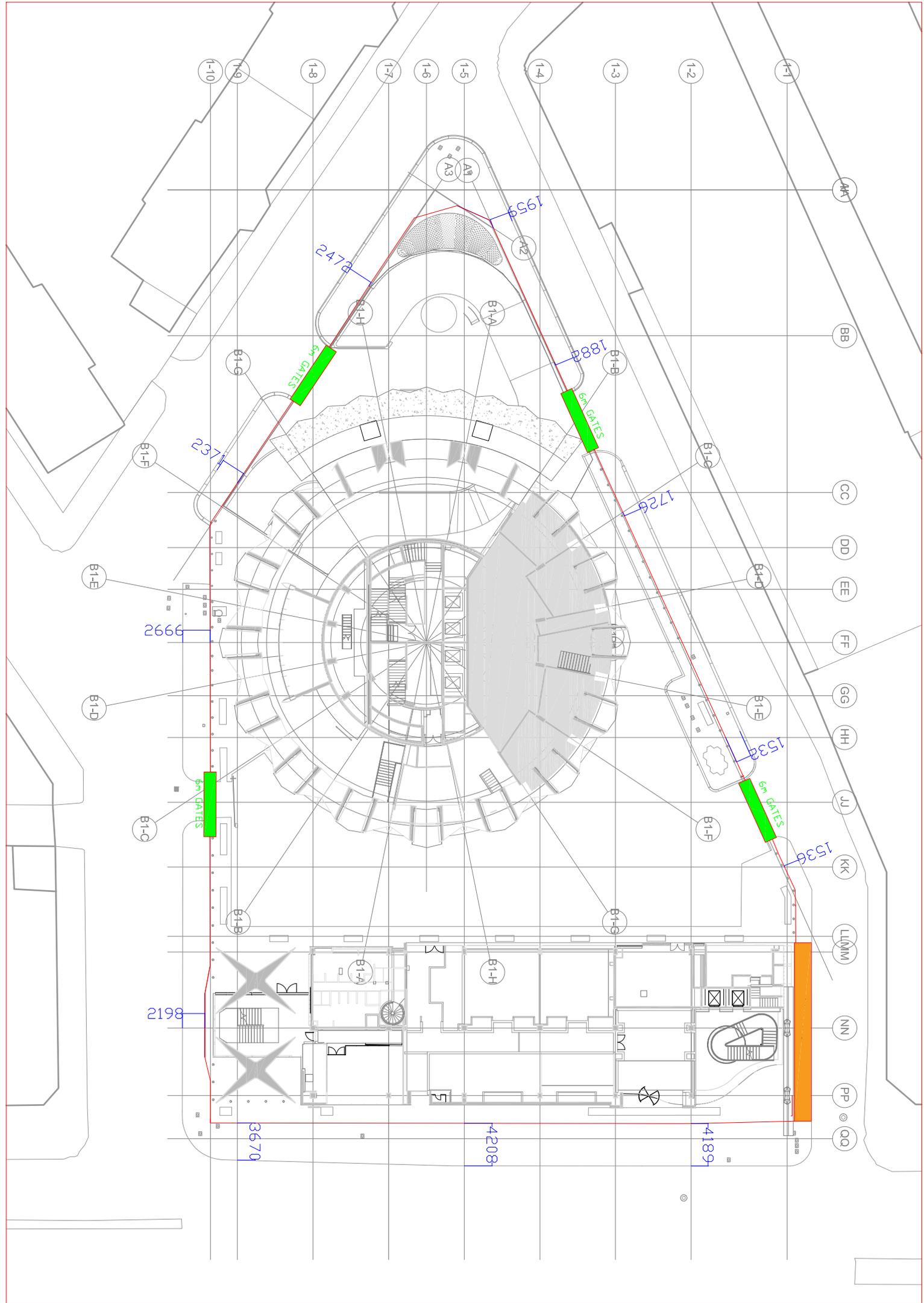
Contractor	Machine Type	Plant ID	KW	Engine Manufacturer	Manufacturer Year	Approval Code	Start Date/End Date on site	Comments
<i>e.g. -Erith Contractors</i>	<i>Excavator</i>	<i>K60125</i>	<i>270</i>	<i>Komatsu</i>	<i>2015</i>	<i>E11*97/28LA:2010/26:1073:00</i>	<i>12/12/2012-22/02/2013</i>	<i>N/A</i>

Erith Contractors

# Appendix H

Proposed Hoarding Lines





Erith Contractors

# Appendix J

Air Quality Assessments





# **Air Quality Assessment Report**

## **Space House**

**DATE OF ISSUE: 20 FEBRUARY 2020**

**ISSUE: 03**

**HM REFERENCE: 25738-RP-SU-001**

**PROJECT:**

**SPACE HOUSE  
1 KEMBLE STREET & 43-59 KINGSWAY  
LONDON  
WC2B 4AN**

**CLIENT:**

**SLQR TRUSTEE NO1 LIMITED &  
SLQR TRUSTEE NO2 LIMITED  
AS CO TRUSTEES FOR SLQR UNIT  
TRUST NO3**

**PROJECT NAME: SPACE HOUSE**  
**REPORT NAME: Air Quality Assessment Report**  
**Space House**  
**ISSUE STATUS: FINAL**  
**HM REFERENCE: 25738-RP-SU-001**

**DATE OF ISSUE: 20 FEBRUARY 2020**  
**ISSUE: 03**

**AUTHOR: TOM READE**  
**CHECKER: TOM HALL**  
**APPROVER: CHRIS BIRCH**

**HM OFFICE: SHACKLETON HOUSE** **T: +44 (0)20 7940 8888**  
**HAYS GALLERIA** **HILSONMORAN.COM**  
**4 BATTLEBRIDGE LANE** **INFO@HILSONMORAN.COM**  
**LONDON**  
**SE1 2HP**

**DOCUMENT HISTORY:**

ISSUE	DATE	DETAILS
00	20/5/2019	FINAL FOR PLANNING
01	18/2/2020	PLANNING CONDITION DISCHARGE
02	19/2/2020	REVISED PLANNING CONDITION DISCHARGE
03	20/2/2020	FINAL FOR PLANNING CONDITION DISCHARGE

*Copyright © Hilson Moran 2020. All rights reserved. This report is confidential to the party to whom it is addressed and their professional advisers for the specific purpose to which it refers. No responsibility is accepted to third parties, and neither the whole nor any part of this report nor reference thereto may be published or disclosed without the written consent of Hilson Moran.*



## Contents

Executive Summary .....	i
1. Introduction.....	1
2. Legislation, Policy and Guidance .....	3
3. Methodology .....	12
4. Baseline Conditions.....	26
5. Effects Appraisal and Site Suitability .....	32
6. Mitigation.....	37
7. Conclusion .....	41

## Executive Summary

Hilson Moran has been commissioned by Avison Young, on behalf of SLQR Trustee No1 Limited & SLQR Trustee No2 Limited as Co Trustees for SLQR Unit Trust No3, to undertake an air quality assessment and respond to the requirements of Condition 16 of planning permission reference 2019/2773/P, dated 26<sup>th</sup> November 2019, for the refurbishment and extension of 1 Kemble Street, London.

This report presents the findings of the assessment, which addresses the potential air quality impacts during both the construction and operational stages of the Approved Development and respond to each part of Condition 16 of the planning permission. The assessment has been undertaken in line with the relevant policy and guidance, and where necessary outlines the required mitigation measures to minimise impacts.

A qualitative assessment of construction phase impacts has been carried out. There is a low risk of dust soiling and a negligible risk of fugitive PM<sub>10</sub> emissions during demolition, earthworks, construction and trackout. As the construction related dust risk is low to negligible, parts c), d) and e) of planning condition no. 16 are not required. Nevertheless, through good site practice and the implementation of standard mitigation measures in line with best practice guidance, the impact of dust and PM<sub>10</sub> releases will be minimised. The residual effect of the construction phase on air quality is therefore not significant.

A quantitative assessment of operational phase impacts has been carried out by modelling the emissions from development related traffic, using the ADMS-Roads dispersion model, and from the proposed gas-fired boilers, using the ADMS 5.2 dispersion model. The detailed road traffic assessment has been carried out to discharge the planning condition no. 16 associated with the permission for development, although it is noted that the vehicle trip generation from the Approved Development does not breach the criteria in air quality planning guidance for sites within an AQMA.

In summary, the results indicate the impact of the Approved Development is classified as negligible with the exception of existing receptor E1 (London School of Economics), which is classified as moderate adverse. However, given the nature of existing receptor E1 the 1-hour mean objective is considered to be most applicable.

There are no predicted exceedances of the 1-hour mean NO<sub>2</sub> air quality standard (AQS) objective, therefore mitigation is not required and therefore parts a) and b) of planning condition no. 16 are not required.

With respect to particulates, the operation of the proposed gas-fired boilers are not expected to contribute to emissions of PM<sub>10</sub> and PM<sub>2.5</sub>. No exceedances are predicted as a result of the vehicle emissions on PM<sub>10</sub> and PM<sub>2.5</sub> concentrations, and impacts are identified as negligible. Therefore, mitigation is not recommended and therefore parts a) and b) of planning condition no. 16 are not required.

The overall residual effect for the operational phase is not significant.

It is worth noting that with the introduction of the Real Driving Emissions (RDE) testing and the emergence of cleaner vehicle technologies (in particular EURO 6 (VI) a, b, c and d fleet categories – which indicate lower emissions than the previous EURO 5 (V), and the uptake of electric/hybrid vehicles) that deliver improvements in vehicle emissions, in particular NO<sub>x</sub>, ambient pollutant concentrations have the potential to be lower in the future.

---

The Approved Development was found to be compliant in relation to Building and Transport Emissions and is therefore air quality neutral. No mitigation or additional off-setting is required.

Therefore, it is considered that the requirements of planning condition no. 16 have been addressed through the assessment. Mitigation in the operational phase has been demonstrated to not be required, and therefore parts a) and b) of the condition are not applicable. The assessment also identifies that the construction related risk of dust is low to negligible, and therefore parts c), d) and e) are also not applicable.

Overall, with the inclusion of standard mitigation measures as best practice (construction phase only), the proposals would be compliant with legislation and policy.

## 1. Introduction

Hilson Moran has been commissioned by Avison Young, on behalf of SLQR Trustee No1 Limited & SLQR Trustee No2 Limited as Co Trustees for SLQR Unit Trust No3, to undertake an air quality assessment and respond to the requirements of Condition 16 of planning permission reference 2019/2773/P, dated 26<sup>th</sup> November 2019, for the refurbishment and extension of 1 Kemble Street, London, hereafter referred to as the 'Approved Development' or the 'Site'.

### 1.1. Approved Development

The Site lies within the London Borough of Camden (LBC) but to south of Kemble Street is the City of Westminster, as illustrated in **Figure 1**.

A planning application and associated listed building consent (References 2019/2773/P and 2019/2790/L) for the Approved Development was approved on 26<sup>th</sup> November 2019 for the following:

*“Removal of existing roof plant equipment at 1 Kemble Street and erection of a single storey facsimile floor plus one setback floor; removal of roof plant from 43-59 Kingsway and erection of a single storey set-back extension; enclosure of the southern external stair at ground floor level on Kingsway with slimline glazing replacement windows and new glazing at ground floor level across the site; enclosing the redundant petrol filling station area with slimline glazing; façade cleaning; new landscaping and public realm works and internal alterations to both buildings in connection with their refurbishment and change of use from Class B1 offices to Class A1/A3 and flexible Class B1/B1 and events space (sui generis) at part ground and basement levels.”*

The planning permission includes the following pre-commencement condition no. 16 relating to air quality:

*“At least 4 months prior to commencement of development excluding site preparation works, a detailed air quality assessment including acceptable methodology and assumptions shall be submitted to the LPA for approval. If mitigation is applicable:*

- a) full details of the mechanical ventilation systems including air inlet locations shall be submitted to and approved by the local planning authority in writing. Air inlet locations should be located away from busy roads and the boiler stacks and as close to roof level as possible, to protect internal air quality. The development shall thereafter be constructed and maintained in accordance with the approved details; and*
- b) evidence that an appropriate NO<sub>2</sub> filtration system on the mechanical ventilation intake has been installed to the relevant parts of the development, and a detailed mechanism to secure maintenance of this system and changing of filters, should be submitted to the Local Planning Authority and approved in writing.*

*If the air quality assessment indicates medium or high construction related dust risk, the following shall be submitted to the LPA for approval:*

- c) a Construction Dust & Emissions Risk Assessment and Mitigation Proposals report produced by a suitably qualified professional. Unless recommended otherwise by the report, real-time air quality monitoring shall be implemented on site including for the purposes of establishing a baseline;*

- d) *prior to installing any air quality monitors for these purposes, full details concerning them must be submitted to and approved by the local planning authority in writing. Such details shall include the location, number and specification of the monitors, including evidence of the fact that they have been installed in line with guidance outlines in the GLA's Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance;*
- e) *prior to commencement, evidence shall be submitted to the local planning authority for approval, demonstrating that the monitors have been in place for at least 3 months prior to the proposed implementation date.*

*The monitors shall be retained and maintained on site for the duration of the development in accordance with the details thus approved."*

The purpose of this report is to update the assessment issued for planning to discharge the requirements of the planning condition outlined above.

## 1.2. Potential Impacts

This report presents the findings of the air quality assessment for both the operational and construction phase. During the construction phase, activities on the Site could give rise to dust, which, if transported beyond the site boundary, could have an adverse effect on local air quality. During the operational phase, emissions arising from vehicles and any onsite combustion plant (such as gas-fired boilers) have the potential to affect local pollution levels, both within and surrounding the Development Site. For both phases the impacts are identified and the mitigation measures that should be implemented to minimise these impacts are described.

The air quality assessment considers the potential impact on future users of the Approved Development as the site is located within an existing Air Quality Management Area (AQMA). Furthermore, an Air Quality Neutral Assessment (AQNA) has been undertaken in accordance with the Mayor of London's Supplementary Planning Guidance.

Consideration has been given to whether parts a) to e) of planning condition no. 16 have been triggered by the assessment.

A glossary of terms is provided in **Appendix A**.

## 2. Legislation, Policy and Guidance

### 2.1. Legislation

A summary of the relevant air quality legislation is provided below.

#### 2.1.1. Air Quality Strategy for England, Scotland, Wales and Northern Ireland

The Government's policy on air quality within the UK is set out in the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland<sup>1</sup>, most recently updated in July 2007. The AQS sets out a framework for reducing hazards to health from air pollution and ensuring that the European Union and International agreements are met in the UK.

The AQS covers the following air pollutants: ammonia (NH<sub>3</sub>), benzene (C<sub>6</sub>H<sub>6</sub>), 1,3 butadiene (C<sub>4</sub>H<sub>6</sub>), carbon monoxide (CO), lead (Pb), oxides of nitrogen (NO<sub>x</sub>) (including nitrogen dioxide NO<sub>2</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulphur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), and polycyclic aromatic hydrocarbons (PAHs).

The AQS sets standards and objectives for the listed pollutants for the protection of human health, vegetation and ecosystems. The standards are based on recommendations by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO) based on current understanding and scientific knowledge about the effects of air pollution on health and the environment. The air quality objectives are policy based targets set by the UK Government that are often expressed as maximum concentrations not to be exceeded either without exception or with a limited number of exceedances within a specified timescale.

For the pollutants considered in this assessment, there are both a long-term (*e.g.* annual mean) and short-term standards (*e.g.* one hour mean). In the case of NO<sub>2</sub>, the short term standard is for a 1-hour averaging period (no more than 18 exceedances of 200 µg/m<sup>3</sup> per year), whereas for PM<sub>10</sub> it is a 24-hour averaging period (no more than 35 exceedances of 50 µg/m<sup>3</sup> per year). The variation in time periods reflects the varying impacts on health of differing exposures to pollutants.

#### 2.1.2. Air Quality Standards Regulations

The air quality objectives in the AQS are statutory in England with the Air Quality (England) Regulations 2000<sup>2</sup> and the Air Quality (England) (Amendment) Regulations 2002<sup>3</sup> for the purpose of Local Air Quality Management (LAQM).

The regulations require likely exceedances of the AQS objectives to be assessed in relation to:

*"...the quality of air at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present..."*

The Air Quality Standards (Amendment) Regulations 2016<sup>4</sup> transpose the European Union Ambient Air Quality Directive (2008/50/EC) into law in England, with the Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 ensuring continuation of the transposition of the Directive. This Directive sets legally binding limit values for concentrations in outdoor air of major air pollutants that impact public health such as NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. The limit values for NO<sub>2</sub> and PM<sub>10</sub> are the same concentration levels as the relevant AQS objectives and the limit value for PM<sub>2.5</sub> is a concentration of 20µg/m<sup>3</sup>. The relevant air quality objectives are presented in Table 2.1.

**Table 2.1 Air Quality Objectives for Relevant Pollutants**

Pollutant	Concentration	Measured as
NO <sub>2</sub>	200 µg/m <sup>3</sup>	1-hour mean, not to be exceeded more than 18 times a year (99.79%ile)
	40 µg/m <sup>3</sup>	Annual mean
PM <sub>10</sub>	50 µg/m <sup>3</sup>	24-hour mean, not to be exceeded more than 35 times a year (90.41%ile)
	40 µg/m <sup>3</sup>	Annual mean
PM <sub>2.5</sub>	20 µg/m <sup>3</sup>	Annual mean

### 2.1.3. Environment Act 1995

Part IV of the Environment Act 1995<sup>5</sup> requires local authorities to periodically review and assess the quality of air within their administrative area. The reviews have to consider both the air quality at the time of review and likely future air quality during the ‘relevant period’ and whether any air quality objectives prescribed in regulations are being achieved or are likely to be achieved in the future. Where the objectives are not likely to be achieved, an authority is required to designate an AQMA. For each designated AQMA the local authority is required to produce an Air Quality Action Plan (AQAP) that works to ensure compliance with the objectives by implementing a number of air quality improvement measures.

### 2.1.4. Environmental Protection Act 1990

Section 79 of the Environmental Protection Act 1990 (as amended)<sup>6</sup> makes provision for the identification and control of statutory nuisances. The Act identifies statutory nuisance, in relation to air quality, as:

- *“Any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance”;* and
- *“Any accumulation or deposit which is prejudicial to health or a nuisance”.*

As a result, the level at which a nuisance occurs is highly variable and dependent on perception, with effects influenced by existing conditions and the degree of change that has occurred.

Where a statutory nuisance has been demonstrated the local authority must serve an abatement notice, non-compliance with which would constitute a legal offence. The abatement notice may prevent or restrict occurrence or re-occurrence of the nuisance or the local authority may, itself, undertake action to abate the nuisance and recover any associated expenses.

## 2.2. Planning Policy

A summary of the national, regional and local planning policy relevant to air quality and the Development is detailed below.

## 2.2.1. National Planning Policy

### 2.2.1.1. National Planning Policy Framework

The National Planning Policy Framework (NPPF) 2019<sup>7</sup> sets out policies, which will apply to the preparation of local plans, and to development management decisions. This framework sets out the Government's economic, environmental and social planning policies for England. Taken together, these policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.

The NPPF sets out the Government's planning policies on the conservation and enhancement of the natural environment, with the following paragraphs relating to air quality:

- Paragraph 8c, which states *"to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy"*;
- Paragraph 54, which states *"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition"*;
- Paragraph 103, which states *"the planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making"*;
- Paragraph 170e, which states *"preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans"*;
- Paragraph 181, which states *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan"*;

- Paragraph 183, which states *“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities”*; and,
- Paragraph 205c, which states *“ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties”*.

## **2.2.2. Regional Planning Policy**

### **2.2.2.1. Clearing the Air: The Mayor’s Air Quality Strategy 2010**

The Mayor’s Air Quality Strategy<sup>8</sup> is focused on delivering improvements to London’s air quality and identifies road traffic as the largest contributor to air pollution. The strategy sets out a framework for improving air quality and details a number of measures to reduce emissions in London, these include:

- Development of electric vehicle infrastructure;
- Congestion charging and the London Low Emission Zone (LEZ);
- Smarter travel initiatives to encourage a shift to greener modes of transport;
- Funding and supporting car clubs (especially hybrid and electric cars);
- Maintaining roads in good repair to reduce the contribution of particulate matter from road surface wear;
- Smoothing traffic;
- Bus emissions programme, so that older buses have been fitted with particulate traps and diesel-electric hybrid buses are introduced as quickly as possible; and
- Publication and implementation of the London Best Practice Guidance for controlling dust and emissions from construction.

Regarding new developments, the Strategy plans to make use of the existing planning system to ensure that any new development does not have a negative impact on air quality in London by stating *‘new developments in London shall as a minimum be ‘air quality neutral’ through the adoption of best practice in the management and mitigation of emissions’*. It also aims to implement the Construction Best Practice Guidance on all construction sites across London.

### **2.2.2.2. The London Plan: Spatial Development Strategy for Greater London 2016**

Planning policy in respect of development planning and air quality management is also presented in the London Plan<sup>9</sup>. Policy 7.14 on improving air quality states that development proposals should:

- Minimise exposure to existing poor air quality, make provision for addressing air quality problems and where development is likely to be used by large numbers of people particularly vulnerable to poor air quality, set up design solutions, buffer zones and travel plans for promoting a greater use of sustainable transport modes;

- Promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance;
- Be at minimum ‘air quality neutral’ and not lead to further deterioration of existing poor air quality;
- Ensure that where provision needs to be made to reduce emissions from a development, this is generally made on-site; and
- Where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations.

### 2.2.2.3. The London Plan (Intend to Publish): Spatial Development Strategy for Greater London 2019

Planning policy in respect of development planning and air quality management is also presented in the ‘Intend to Publish’ version of the London Plan<sup>10</sup>, which is being taken by the Mayor of London as adopted policy. Policy SI1 on improving air quality states:

- *Development proposals should not:*
  - i. *Lead to further deterioration of existing poor air quality;*
  - ii. *Create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits;*
  - iii. *Reduce air quality benefits that result from the Mayor’s or boroughs’ activities to improve air quality;*
  - iv. *Create unacceptable risk of high levels of exposure to poor air quality.*
- *Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality. Particular care should be taken with developments that are in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people.*
- *The development of large-scale redevelopment areas, such as Opportunity Areas and those subject to an Environmental Impact Assessment should propose methods of achieving an Air Quality Positive approach through the new development. All other developments should be at least Air Quality Neutral.*
- *Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.*
- *Air Quality Assessments (AQAs) should be submitted with all major developments, unless they can demonstrate that transport and building emissions will be less than the previous or existing use.*
- *Development proposals should ensure that where emissions need to be reduced, this is done on-site. Where it can be demonstrated that on-site provision is impractical or inappropriate, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated.*

### 2.2.3. Local Planning Policy

#### 2.2.3.1. London Borough of Camden Local Plan

The Camden Local Plan 2017<sup>11</sup> sets out the Council’s planning policies. It ensures that Camden continues to have robust, effective and up to-date planning policies that respond to changing

circumstances and the borough's unique characteristics and contribute to delivering the Camden Plan and other local priorities. The Local Plan will cover the period from 2016-2031.

The policies of interest within the local plan include: Policy CC4 – Air Quality, which states:

*“The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.*

*The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.*

*Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.*

*Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan”.*

In addition to Policy CC4, this Plan also actively supports the improvement of air quality in Camden by:

- Requiring all new development in the borough to be ‘car-free’ (see Policy T2 Parking and car-free development);
- Maintaining and increasing green infrastructure (see Policy A2 Open space);
- Reducing emissions associated with new development (see Policy CC1 Climate change mitigation); and,
- Supporting and encouraging sensitive energy efficiency improvements to existing buildings (see Policy CC1 Climate change mitigation).

#### **2.2.3.2. Camden's Draft Clean Air Action Plan**

The Camden Draft Clean Air Action Plan<sup>12</sup> has been produced as part of the borough's duty to London Local Air Quality Management. It outlines the action they will take to improve air quality in Camden between 2019 and 2022. The Clean Air Action Plan (CAAP) is split across seven themes:

- Building Emissions;
- Construction Emissions;
- Transport Emissions;
- Communities and Schools;
- Delivery, Servicing and Freight;
- Public Health and Awareness; and,
- Lobbying.

The CAAP has been developed in recognition of the role local authorities have under the Environment Act to meet the air quality obligations. Camden's role in this includes:

- Working to reduce emissions from their own estate and operations;
- Helping residents and visitors to reduce emissions and exposure;
- Using planning policy and regulation to reduce air pollution;
- Implementing innovative projects across the borough to improve air quality;
- Using their influence to lobby for increased financial and regulatory support for the mitigation of air pollution;
- Maintaining a monitoring network and ensuring the data is freely accessible; and,
- Raising awareness on how to reduce emissions and exposure.

The CAAP is supported by a number of other plans and strategies (including Camden 2025, Our Camden Plan, Green Action for Change 2010 – 2020, Camden’s Parking and Enforcement Plan, Camden’s Transport Strategy 2019 – 2022 and the Joint Strategic Needs Assessment) with the overarching aim of improving air quality in the borough of Camden.

#### **2.2.4. Guidance**

A summary of the publications referred to in undertaking the air quality assessment is provided below.

##### **2.2.4.1. London Local Air Quality Management Technical Guidance**

The Mayor of London has published guidance for use by the London boroughs in their review and assessment work<sup>13</sup>. The guidance is referred to as LLAQM.TG(16) and has been appropriately used within this assessment.

##### **2.2.4.2. Local Air Quality Management Review and Assessment Technical Guidance**

The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities. This technical guidance, identified as LAQM.TG(16)<sup>14</sup>, is for use by local authorities for their review and assessment work and has been applied where appropriate to this assessment.

##### **2.2.4.3. Land-Use Planning and Development Control: Planning for Air Quality**

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have published guidance<sup>15</sup> which offers advice as to when and air quality assessment may or may not be required. The guidance document details what should be included within an assessment, how to determine the significance of air quality impacts and the likely mitigation measures required to minimise the impacts.

##### **2.2.4.4. Guidance on the Assessment of Dust from Demolition and Construction**

This document<sup>16</sup>, published by the IAQM, provides guidance on how to assess the impact of construction activities on air quality associated with new developments. The methodology prescribed within the document allows the impacts to be categorised based on risk (with particular reference to dust and PM<sub>10</sub> on sensitive human and ecological receptors) and, where applicable, identify mitigation measures associated to the risk classification determined.

##### **2.2.4.5. National Planning Practice Guidance**

The National Planning Practice Guidance<sup>17</sup> outlines how the planning process can address potential air quality impacts associated with new development. It provides guidance on the level of detail

required, how impacts can be mitigated and also provides information on how local authorities may take air quality as a specific consideration in a planning decision.

#### **2.2.4.6. London Councils Guidance for Air Quality Assessments**

The London Councils have published guidance<sup>18</sup> for undertaking air quality assessments in the London Boroughs, the majority of which have declared AQMA's. The guidance sets out suggested methodologies for undertaking air quality assessments and sets out criteria for determining the impacts of a new development on air quality.

#### **2.2.4.7. Mayor of London's Supplementary Planning Guidance for the Control of Dust and Emissions during Construction and Demolition**

The Supplementary Planning Guidance (SPG)<sup>19</sup> builds on the London Councils guidance to establish best practice when mitigating impacts on air quality during construction and demolition. The SPG, offers further detail and seeks to address emissions from Non-Road Mobile Machinery (NRMM) through the use of a Low Emission Zone, which was introduced in 2015.

The SPG provides a methodology for assessment the impacts on air quality of the construction and activities following the same procedure set out in the IAQM guidance. It identifies the potential impacts and risks to sensitive receptors and details the relevant control measures required to mitigate any adverse impacts.

#### **2.2.4.8. Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance**

Section 4.3 of this SPG<sup>20</sup> provides guidance on when an air quality assessment is required, looks at how transport measures can minimise emissions to air and sets out emissions standards/limits for combustion plant.

The SPG also contains guidance on assessing the air quality neutrality of a new development. Emission benchmarks for transport and buildings for NO<sub>x</sub> and PM<sub>10</sub> are detailed in the SPG.

Developments that do not exceed the calculated emission benchmarks are considered 'air quality neutral', however when the emission benchmarks are exceeded the development is not 'air quality neutral'. Where a development exceeds the benchmarks, additional mitigation or off-setting is required. This can be achieved by providing appropriate abatement including: green planting, upgrade or additional abatement to on-site combustion plant, retro-fitting of abatement technology for vehicles or flues, exposure reduction. Such measures can be achieved by condition or S106 contribution. The SPG states that air quality monitoring is not an eligible method for off-setting air quality impacts as this does not contribute to actual air quality improvements.

#### **2.2.4.9. Camden planning Guidance – Amenity**

The Camden Amenity Planning Guidance<sup>21</sup> was adopted in September 2011, but subsequently updated in March 2018. The planning guidance outlines what the Council requires in relation to air quality for a planning application, what an air quality assessment should cover, and what measures can be implemented to minimise pollutant and protect public exposure. This guidance has been used to inform this assessment where appropriate.

#### **2.2.4.10. Camden's Planning Guidance – Air Quality**

The Camden Planning Guidance on Air Quality<sup>22</sup> forms a Supplementary Planning Document that supports the policies contained within the Local Plan, providing information on key air quality issues within the borough. The guidance provides a background to air quality in the borough, requirements for air quality assessments and measures to minimise emissions to air.

#### **2.2.4.11. Air Quality Neutral Planning Support Guidance**

The Air Quality Neutral Planning Support Guidance<sup>23</sup> provides a methodology for assessing the air quality neutrality of Proposed Developments in London.

#### **2.2.4.12. Calculator Using Realistic Emissions for Diesels (CURED)**

The CURED methodology uses an approach developed by Air Quality Consultants (AQC) to adjust vehicle emissions to take into account real world driving conditions of diesel vehicles. The CURED approach uses the same information with respect to vehicle fleet composition as the emission factor toolkit (EFT) and speed-emissions curves produced by Defra; however, the total NO<sub>x</sub> output has been uplifted to give higher emissions of NO<sub>x</sub>. The reason for this undertaken is that there is uncertainty in the reduction of NO<sub>x</sub> emissions over time that are built into the EFT calculator, therefore this approach offers a more conservative vision. It should be noted that this approach does not consider PM<sub>10</sub> or PM<sub>2.5</sub> as there is no evidence to support that these pollutants are affected.

### 3. Methodology

#### 3.1. Scope of the Assessment

The scope of the assessment has been determined in the following way:

- Consultation with the Environmental Health Officer (EHO) at LBC to agree the scope of the assessment and the methodology to be applied;
- Review of the LBC's latest review and assessment reports<sup>24</sup> and the air quality data for the area surrounding the Site, including the LBC, Defra<sup>25</sup>, the London Air Quality Network (LAQN)<sup>26</sup> and the London Atmospheric Emissions Inventory (LAEI)<sup>27</sup>;
- Desk study to confirm the locations of nearby existing receptors that may be sensitive to changes in local air quality, and a review of the masterplan for the Development to establish the location of new sensitive receptors;
- Review of the traffic data, provided by Caneparo Associates; and,
- Review of the technical specifications for the proposed onsite gas-fired boilers, provided by Long and Partners.

The scope of the assessment includes consideration of the potential impacts on local air quality resulting from:

- Dust and particulate matter generated by on-site activities during the construction phase;
- Increases in pollutant concentrations as a result of exhaust emissions arising from construction traffic and plant;
- Increases in pollutant concentrations as a result of exhaust emissions arising from traffic generated by the Approved Development once operational; and,
- Increases in pollutant concentrations as a result of emissions generated by the proposed onsite gas-fired boilers once the Approved Development is operational.

#### 3.2. Construction Phase

Assessment of the risk of impact associated with the generation of dust during the construction phase of the Approved Development and determination of subsequent mitigation measures necessary has been undertaken following IAQM guidelines.

The assessment is based on a series of steps: screening the requirement for a detailed assessment, classification of the likely magnitude of dust emissions; characterisation of the area of influence and establishment of its sensitivity to dust; and establishment of the overall risk of impact. The risk of impact from dust emissions from the Approved Development considers effects on human health, nuisance as a result of dust soiling and ecological receptors from four main activities: demolition; earthworks; construction; and trackout. The potential for dust emissions from each activity should be considered, unless any of them are not relevant to the Approved Development.

The guidelines identify appropriate screening criteria for the identification of potential receptors, based on a conservative approach and in consideration of the exponential decline in both airborne concentrations and the rate of deposition with distance. A detailed assessment of the impact of dust from construction sites will be required where:

- A 'human receptor' is located within 350m of the boundary of the site or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance;

- An ‘ecological receptor’ is located within 50m of the boundary of the site or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance.

The magnitude of dust emissions for each activity is classified as small, medium or large depending upon the scale of the works proposed, materials involved and level of activity required. The IAQM guidelines provide examples of how the magnitude of emission can be defined, which are identified in Table 3.1. The Approved Development is unlikely to satisfy all criteria within the examples, therefore professional judgement and site specific information are used to identify appropriate emission magnitude.

**Table 3.1 Dust Emission Magnitude (Source: IAQM Guidance, v1.1 Updated June 2016)**

Activity	Small	Medium	Large
Demolition	<ul style="list-style-type: none"> <li>• Total building volume &lt;20,000m<sup>3</sup></li> <li>• Construction material with low potential for dust release (e.g. metal cladding or timber)</li> <li>• Demolition activities &lt;10m above ground level</li> <li>• Demolition during wetter months</li> </ul>	<ul style="list-style-type: none"> <li>• Total building volume 20,000 - 50,000m<sup>3</sup></li> <li>• Potentially dusty construction material</li> <li>• Demolition activities 10-20m above ground level</li> </ul>	<ul style="list-style-type: none"> <li>• Total building volume &gt;50,000m<sup>3</sup></li> <li>• Potentially dusty construction material (e.g. concrete)</li> <li>• On-site crushing and screening</li> <li>• Demolition activities &gt;20m above ground</li> </ul>
Earthworks	<ul style="list-style-type: none"> <li>• Total site area &lt;2,500m<sup>2</sup></li> <li>• Soil type with large grain size (e.g. sand)</li> <li>• &lt;5 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds &lt;4m in height</li> <li>• Total material moved &lt;20,000 tonnes</li> <li>• Earthworks during wetter months</li> </ul>	<ul style="list-style-type: none"> <li>• Total site area 2,500 - 10,000m<sup>2</sup></li> <li>• Moderately dusty soil type (e.g. silt)</li> <li>• 5 - 10 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds 4 - 8m in height</li> <li>• Total material moved 20,000 - 100,00 tonnes</li> </ul>	<ul style="list-style-type: none"> <li>• Total site area &gt;10,000 m<sup>2</sup></li> <li>• Potentially dusty soil type (e.g. clay)</li> <li>• &gt;10 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds &gt;8m in height</li> <li>• Total material moved &gt;100,000 tonnes</li> </ul>
Construction	<ul style="list-style-type: none"> <li>• Total building volume &lt;25,000 m<sup>3</sup></li> <li>• Construction material with low potential for dust (e.g. metal cladding or timber).</li> </ul>	<ul style="list-style-type: none"> <li>• Total building volume 25,000 - 100,000 m<sup>3</sup></li> <li>• Potentially dusty construction material (e.g. concrete)</li> <li>• On-site concrete batching</li> </ul>	<ul style="list-style-type: none"> <li>• Total building volume &gt;100,000 m<sup>3</sup></li> <li>• On-site concrete batching, sandblasting</li> </ul>
Trackout	<ul style="list-style-type: none"> <li>• &lt;10 HDV (&gt;3.5t) outward movements* in any one day<sup>#</sup></li> <li>• Surface material with low potential for dust release</li> <li>• Unpaved road length &lt;50m</li> </ul>	<ul style="list-style-type: none"> <li>• 10 - 50 HDV (&gt;3.5t) outward movements* in any one day<sup>#</sup></li> <li>• Moderately dusty surface material (e.g. high clay content)</li> <li>• Unpaved road length 50 - 100m</li> </ul>	<ul style="list-style-type: none"> <li>• &gt;50 HDV (&gt;3.5t) outward movements* in any one day<sup>#</sup></li> <li>• Potentially dusty surface material (e.g. high clay content)</li> <li>• Unpaved road length &gt;100 m</li> </ul>
<p>* A vehicle movement is a one way journey, i.e. from A to B, and excludes the return journey.</p> <p># HDV movements during a construction project vary over its lifetime, and the number of movements is the maximum not the average.</p>			

Consideration is given to the likely sensitivity of the area to the impacts of dust, establishing a sensitivity of low, medium or high for dust soiling, human health and ecological receptors. The sensitivity of the area considers a number of factors, including the specific sensitivities of receptors in the area, the proximity and number of those receptors, local baseline conditions such as background concentrations and site specific factors.

The first step in identifying the sensitivity of the area is to establish the sensitivity of the receptor, based on the presence or level of activity associated with the area influenced by the Approved Development. Professional judgement and site specific information are used to assign an appropriate level of receptor sensitivity using the principles outlined in Table 3.2. Following this, the sensitivity of the area can be established from Tables 3.3 to 3.5 based on the sensitivity of the receptor, number of receptors (in the case of human health and dust soiling) and the distance from source.

**Table 3.2 Receptor Sensitivity Definitions (Source: IAQM Guidance, v1.1 Updated June 2016)**

Activity	Small	Medium	Large
Dust Soiling	<ul style="list-style-type: none"> <li>• Enjoyment of amenity would not reasonably be expected;</li> <li>• There is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling;</li> <li>• Transient exposure, where people or property is only expected to be present for limited periods of time as part of the normal pattern of use;</li> <li>• Indicative examples include playing fields, farmland, footpaths, short-term car parks and roads.</li> </ul>	<ul style="list-style-type: none"> <li>• Users would expect to enjoy a reasonable level of amenity, but not reasonably at same level as in their home;</li> <li>• The appearance, aesthetics or value of property could be diminished by soiling;</li> <li>• Indicative examples include parks and places of work.</li> </ul>	<ul style="list-style-type: none"> <li>• Users can reasonably expect enjoyment of a high level of amenity;</li> <li>• The appearance, aesthetics or value of property would be diminished by soiling, and continuous or regularly extended periods of presence expected during normal pattern of land use;</li> <li>• Indicative examples include dwellings, museum and other culturally important collections, medium and long term car parks and car showrooms.</li> </ul>
Human Health	<ul style="list-style-type: none"> <li>• Locations where human exposure is transient;</li> <li>• Indicative examples include public footpaths, playing fields, parks and shopping streets.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations where the people exposed are workers<sup>#</sup>, and exposure is over a time period relevant to the air quality objective for PM<sub>10</sub>*;</li> <li>• Indicative examples include office and shop workers, but not those occupationally exposed to dust.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations where members of the public are exposed over a period of time relevant to the air quality objective for PM<sub>10</sub>*;</li> <li>• Indicative examples include residential properties, hospitals, schools and residential care homes.</li> </ul>
Ecological	<ul style="list-style-type: none"> <li>• Locations with a local designations where the features may be affected by dust deposition, e.g. Local Nature Reserve.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown;</li> <li>• Locations with a national designation where the features may be affected by dust deposition, e.g. Site of Special Scientific Interest.</li> </ul>	<ul style="list-style-type: none"> <li>• Locations with an international or national designation and the designated features may be affected by dust soiling, e.g. Special Area of Conservation with acid heathland;</li> <li>• Location where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List for Great Britain.</li> </ul>

Activity	Small	Medium	Large
* In the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day, following Defra Guidance.			
# Workers are considered to be less sensitive than the general public as a whole because those most sensitive to the effects of air pollution, such as young children, are not normally workers.			

**Table 3.3** *Sensitivity of the Area to Dust Soiling Effects on People and Property (Source: IAQM Guidance, v1.1 Updated June 2016)*

Receptor Sensitivity	Number of Receptors	Distance from Source			
		<20m	<50m	<100m	<350m
High	>100	High	High	Medium	Low
	10 – 100	High	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

**Table 3.4** *Sensitivity of the Area to Human Health Impacts (Source: IAQM Guidance, v1.1 Updated June 2016)*

Receptor Sensitivity	Annual Mean PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Number of Receptors	Distance from Source				
			<20m	<50m	<100m	<200m	<350m
High	>32	>100	High	High	High	Medium	Low
		10 – 100	High	High	Medium	Low	Low
		1 – 10	High	Medium	Low	Low	Low
	28 - 32	>100	High	High	Medium	Low	Low
		10 – 100	High	Medium	Low	Low	Low
		1 – 10	High	Medium	Low	Low	Low
	24 - 28	>100	High	Medium	Low	Low	Low
		10 – 100	High	Medium	Low	Low	Low
		1 – 10	Medium	Low	Low	Low	Low
	<24	>100	Medium	Low	Low	Low	Low
		10 – 100	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low

Receptor Sensitivity	Annual Mean PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Number of Receptors	Distance from Source				
			<20m	<50m	<100m	<200m	<350m
Medium	>32	>10	High	Medium	Low	Low	Low
		1 – 10	Medium	Low	Low	Low	Low
	28 - 32	>10	Medium	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
	24 - 28	>10	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
	<24	>10	Low	Low	Low	Low	Low
		1 – 10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

**Table 3.5 Sensitivity of the Area to Ecological Impacts** (Source: IAQM Guidance, v1.1 Updated June 2016)

Receptor Sensitivity	Distance from Source	
	<20m	<50m
High	High	Medium
Medium	Medium	Low
Low	Low	Low

### 3.2.1. Establishing Significance

The risk of dust related impacts from the Approved Development is established from the sensitivity of the area and the likely dust emission magnitude. The risk should be established, on the worst-case area sensitivity and in the absence of mitigation, for each of the construction related activities (demolition, earthworks, construction and trackout) following the matrix in Table 3.6.

The IAQM guidelines identify a range of mitigation measures intended to reduce the emission and effects of dust from construction sites, and identify their likely applicability to a development based on the level of impact risk attributed. Consideration is given to these in the development of mitigation measures, with the significance of the residual effect based on professional judgement.

**Table 3.6 Risk of Dust Impacts from Each Activity** (Source: IAQM Guidance, v1.1 Updated June 2016)

Sensitivity of Area	Activity	Dust Emission Magnitude		
		Large	Medium	Small
High	Demolition	High Risk	Medium Risk	Medium Risk
	Earthworks	High Risk	Medium Risk	Low Risk
	Construction	High Risk	Medium Risk	Low Risk
	Trackout	High Risk	Medium Risk	Low Risk
Medium	Demolition	High Risk	Medium Risk	Low Risk
	Earthworks	Medium Risk	Medium Risk	Low Risk
	Construction	Medium Risk	Medium Risk	Low Risk
	Trackout	Medium Risk	Low Risk	Negligible
Low	Demolition	Medium Risk	Low Risk	Negligible
	Earthworks	Low Risk	Low Risk	Negligible
	Construction	Low Risk	Low Risk	Negligible
	Trackout	Low Risk	Low Risk	Negligible

### 3.3. Operational Phase

#### 3.3.1. Road Traffic Emissions

Road traffic emissions are typically the main emission source of NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations resulting from developments. Following consultation with the transport consultant, Caneparo Associates, it has been confirmed that the Approved Development generates an Annual Average Daily Traffic (AADT) flow of <100 Light Duty Vehicles (LDV) and <25 Heavy Duty Vehicles (HDV). Although the traffic generation associated with the Approved Development does not breach the IAQM/EPUK thresholds for the indicative screening criteria for an air quality assessment, a precautionary approach has been adopted to meet the requirements of the planning condition relating to air quality (Condition 16).

To understand the NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations arising as a result of the development, a detailed assessment using the air dispersion model AMDS-Roads, Version 4.1.1.0 (release data 18/01/2018) has been undertaken. This model uses detailed road traffic information, surface roughness and local meteorological information to predict the impact on pollutant concentrations at specific receptor points. Table 3.7 summarises the air quality modelling parameters for road traffic.

**Table 3.7 ADMS Roads Modelling Parameters**

Parameter	Local Area	Met. Measurement Site
Latitude	51.5	51.5
Surface Roughness	1	1
Monin-Obukhov Length (m)	30	30

The ADMS model uses meteorological data, including wind speed and direction, to determine how pollution is transported and diluted with distance from the source. For this assessment meteorological data from London City Airport for 2018 (to align with the baseline traffic data) has been utilised as this is considered representative of the Site.

The traffic data used in the air quality assessment is identified in Table 3.8 and **Figure 2**.

**Table 3.8 Traffic Data used in the Assessment**

Link No.	Link Name	Speed (mph)	2018 Baseline		2024 Baseline		2024 With Development	
			Total AADT	% HDV	Total AADT	% HDV	Total AADT	% HDV
1	A4200 Kingsway	25	24,640	4.7	26,159	4.8	26,266	4.8
2	Keeley St	20	679	0.3	670	0.3	717	3.2
3	Wild St	21	1,637	1.9	1,739	1.9	1,646	1.3
4	Kemble St	21	1,436	1.4	1,525	1.4	1,519	0.8
5	Kean St	18	319	1.6	339	1.6	339	1.6
6	Drury Lane	20	4,647	1.2	4,980	1.3	4,980	1.3
7	NW A4 Strand Gyratory	24	27,077	8.8	28,839	8.8	28,852	8.8
8	NE A4 Strand Gyratory	26	26,930	6.6	28,676	6.7	28,686	6.7
9	South A4 Strand Gyratory	25	25,117	8.1	26,36	8.1	26,746	8.1
10	A4 Strand	22	22,508	6.9	23,915	7.0	23,919	7.0

### 3.3.1.1. Model Scenarios

For the assessment, the following scenarios have been modelled:

- 2018 – Baseline and Verification;
- 2024 – Baseline with Committed Developments; and,
- 2024 – Baseline with Committed Developments and Approved Development.

The above scenarios utilise emission factors and background concentrations from 2018, *i.e.* no improvement in the baseline position.

A sensitivity analysis has been undertaken for the following scenarios:

- 2024 – Baseline with Committed Developments; and,
- 2024 – Baseline with Committed Developments and Approved Development.

The sensitivity analysis utilises emission factors and background concentrations from 2022, an intermediary between the current baseline year and the proposed opening year. This approach assumes some improvements will occur and is considered to be the most reasonable and likely outcome.

### 3.3.1.2. Vehicle Emission Factors

Vehicle emission factors for input into ADMS-Roads have been calculated using the EFT version 9.0 (published May 2019), available on the Defra website<sup>28</sup>. The EFT allows for the calculation of emission factors arising from road traffic for all years between 2017 and 2030. For the predictions of future year emissions, the toolkit takes into account factors such as anticipated advances in vehicle technology and changes in fleet composition, such that vehicle emissions are assumed to reduce over time. There is good evidence from real-world testing of EURO 6 (VI) compliant

vehicles of substantial improvements in vehicle emissions compared to earlier EURO categories, in particular with respect to NO<sub>x</sub> emissions. Total pollutant concentrations are, therefore, likely to be lower in 2024 than in 2018.

Emission factors for NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> for all modelled scenarios under the non-sensitivity analysis have been calculated using Defra's EFT calculator. All scenarios use 2018 emission factors, presenting a worst case scenario.

By assuming no improvement in emission factors between 2018 and 2024 is an extreme worst case approach, therefore under the sensitivity analysis emission factors from 2022 have been utilised. It should be noted that there is currently some uncertainty over how representative future emission factors are using Defra's EFT calculator, particularly in relation to NO<sub>x</sub>. To address this uncertainty, AQC's CURED methodology has been adopted. The CURED toolkit has been developed to address the uncertainties associated with emissions from diesel vehicles and is considered to provide more realistic NO<sub>x</sub> emission factors than Defra's EFT calculator.

Defra's EFT calculator has been used to calculate the emission factors for PM<sub>10</sub> and PM<sub>2.5</sub>, as the CURED methodology does not take these pollutants into account.

### 3.3.1.3. Selection of Background Concentrations

Background concentrations for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> have been obtained from Defra's website, which provides background concentrations mapped at a grid resolution of 1x1 km for the whole of the UK. Estimated background concentrations are available for all years between 2017 and 2030, and the maps assume that background concentrations will reduce (*i.e.* improve) over time.

The Defra background concentrations have been selected for use in the modelling as the 2018 results are slightly higher than the concentrations identified by local urban background monitoring from the London Bloomsbury monitor run by LBC.

For the non-sensitivity analysis 2018 background concentrations will be applied to the baseline and future (2024) assessment scenarios as a worst case approach – this aligns with the emission factors utilised.

For the sensitivity analysis, 2022 background concentrations will be applied to all future year scenarios to align with the emission factors utilised.

Background concentrations for each of the receptors are included in **Appendix B**.

### 3.3.1.4. Model Verification

The ADMS-Roads dispersion model has been validated by the software developer and is considered to be fit for purpose, however local model validation, *i.e.* in the vicinity of the Approved Development, has not been undertaken. Therefore, to validate the model and to determine how well the model is performing at a local level, comparing the modelling results with local monitoring data is undertaken. The verification process aims to minimise model uncertainty and error by adjusting the modelled results by a factor to offer greater confidence in the final results. This is undertaken in accordance with the methodology specified in Chapter 7, Section 4, of LAQM.TG16.

Details of the verification factor calculations are presented in **Appendix C**. An adjustment factor of 2.59 was obtained during the verification process, which indicated that the model was under-predicting. This factor was applied to the modelled road-NO<sub>x</sub> outputs prior to conversion to annual mean NO<sub>2</sub> concentrations utilising the NO<sub>x</sub> to NO<sub>2</sub> calculator (version 7.1, released April 2019) provided by Defra<sup>29</sup>.

No local roadside monitoring data was available for PM<sub>10</sub> and PM<sub>2.5</sub>, therefore the adjustment factor calculated for NO<sub>x</sub> has been applied to both the modelled PM<sub>10</sub> and PM<sub>2.5</sub> concentrations prior to adding to the appropriate background concentration. This approach is in accordance with LAQM.TG16.

### 3.3.2. Combustion Plant Emissions

The impact of the on-site combustion plant has been assessed using ADMS 5.2. The ADMS model uses meteorological data including wind speed and direction to determine the how pollution is transported and diluted with distance from the source. For this assessment meteorological data from London City Airport for 2018 has been utilised as this is considered representative of the Site and aligns with the baseline traffic data. A wind rose for the met station is included in **Appendix D**. Table 3.9 summarises the combustion plant modelling inputs.

**Table 3.9 ADMS 5.2 Modelling Parameters**

Parameter	Each Boiler
Unit Number	3
Stack Height (m)	60.657 (1m above roof level)
Stack Diameter (m)	0.4 (individual)
Flue Gas Release Temperature (°C)	71
Efflux Velocity (m/s)	7.78
NO <sub>x</sub> Emission Rate (g/s)	0.0343
NO <sub>x</sub> Emissions (mg/kWh)	38
NO <sub>x</sub> Emissions (mg/Nm <sup>3</sup> )	44.2
Operating Schedule	12 hours per day

Local topography and the existing built environment can affect the dispersion characteristics of a plume, *i.e.* existing buildings can cause the plume to come to the ground much closer to the stack than would be normally expected. The dispersion model contains algorithms which attempt to account for such impacts.

A description of the modelled buildings can be found in **Appendix E** and is shown in **Figure 3**.

The annual mean NO<sub>x</sub> concentrations and the hourly mean concentrations (99.79<sup>th</sup> percentile) associated with the energy centre have been predicted. The predicted NO<sub>x</sub> contributions were then converted to NO<sub>2</sub> assuming 70% for long-term emissions and 35% for short-term emissions, in accordance with Environment Agency guidance<sup>30</sup>.

#### 3.3.2.1. Significant Energy Centre Contributions

The Environment Agency's Air Emissions risk assessment guidance sets the following criteria whereby PCs can be screened out as being insignificant:

- The long term PC is <1% of the long term environmental standard (for NO<sub>2</sub> <0.4µg/m<sup>3</sup>);
- The short term PC is <10% of the short term environmental standard (for NO<sub>2</sub> <20µg/m<sup>3</sup>).

Where the PC exceeds either of the above criteria the impact is potentially significant, and it is necessary to compare the Predicted Environmental Concentration (PEC) against the relevant AQS objective, by combining the PC with appropriate baseline.

### 3.3.3. In-Combination Impacts of the Emissions from the Combustion Plant and Traffic Emissions

The total NO<sub>2</sub> concentrations (*i.e.* PEC) at each receptor were calculated as follows:

- Long term:  $PEC = PC + \text{Baseline Concentration}$
- Short term:  $PEC_{\text{short term}} = PC_{\text{short term}} + (2 \times \text{Baseline}_{\text{long term}})$ .

To compare the emissions generated from the Approved Development with the relevant AQS, objectives for the PCs have to be combined relevant background concentrations.

To determine compliance with the 1-hour mean objective for NO<sub>2</sub>, detailed modelling has been undertaken and the results are presented in Section 5.2.

Total annual mean concentrations for PM<sub>10</sub> and PM<sub>2.5</sub> are calculated by adding the modelled output with the background concentrations. The total pollutant concentrations are then compared with annual mean objectives of 40µg/m<sup>3</sup> and 25µg/m<sup>3</sup>, respectively.

The short term AQS objective for PM<sub>10</sub> is 50µg/m<sup>3</sup>, where no more than 35 exceedances are allowed per year. Guidance from Defra provides the following equation that relates the long term AQS objective to the short term AQS objective:

$$\text{No. 24-hour mean exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + (206/\text{annual mean}).$$

This approach has been adopted for 24-hour mean PM<sub>10</sub> for this assessment.

### 3.3.4. Significance Criteria

The EPUK and IAQM provide guidance for establishing the significance of air quality impacts arising as a result of the Approved Development. The magnitude of impact on individual receptors is dependent upon the long-term average pollutant concentrations at the receptor in the assessment year and the percentage change relative to the Air Quality Assessment Level (AQAL), as identified in Table 3.10.

**Table 3.10 Impact Descriptors**

Long-term Average Concentration at Receptor in Assessment Year	Percentage Change in Concentration to AQAL*			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76 – 94% of AQAL	Negligible	Slight	Moderate	Moderate
95 – 102% of AQAL	Slight	Moderate	Moderate	Substantial
103 – 109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

\*Where the % change is <0.5% the change is described as 'Negligible' regardless of concentration.

The guidelines do not, however, provide a set method for establishing the significance of impact. Whilst the establishment of the impact magnitude on individual receptors can be identified as negligible, slight, moderate or substantial, the significance of the overall effect is dependent on a number of factors. Therefore, professional judgement will be applied to determine the likely significance of effects, with the following factors considered:

- The existing and future air quality in the absence of the development, notably whether the Air Quality Objectives are likely to be met or the scale of exceedances in the long-term and short-term concentrations;
- The extent of current and future population exposure to the impacts, notably the number of properties and/or people present and the scale of impact (*e.g.* whether the majority of the local population is subject to substantial or slight magnitude impacts);
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts, such as establishing a worst-case scenario for sensitive receptors.

In addition, the London Council’s guidance for air quality assessments<sup>31</sup> provides a flow chart for assessing the significance of air quality impacts. These are illustrated in Table 3.11.

**Table 3.11 London Councils Flow Chart Method for Assessing the Significance of Air Quality Impacts**

Effect of Development	Outcome
Will development interfere with or prevent implementation of measures in the AQAP?	Air Quality is an overriding consideration.
Is development likely to cause a worsening of air quality or introduce new exposure into the Air Quality Management Area (AQMA)?	Air Quality of a highly significant consideration.
Would the development contribute to air quality exceedances or lead to the designation of a new AQMA?	Air Quality is a highly significant consideration.
Is the development likely to increase emissions of or increase/introduce new exposure to PM <sub>10</sub> ?	Air Quality is a significant consideration.

The London Councils guidance for air quality assessments has published the Air Pollution Exposure Criteria (APEC) specifically for new exposure to determine the significance of new exposure to poor air quality and level of mitigation required. The APEC criteria are identified in Table 3.12.

**Table 3.12 London Councils Significance Criteria**

APEC Level	Applicable Range Annual Average NO <sub>2</sub>	Applicable Range PM <sub>10</sub>	Recommendation
A	>5% below national objective	Annual Mean: >5% below national objective 24-hour Mean: >1 day less than the national objective	No air quality grounds for refusal, however mitigation of any emissions should be considered.
B	Between 5% below or above national objective	Annual Mean: Between 5% below or above national objective. 24-hour Mean: Between 1 day above or below the national objective.	May not be sufficient air quality grounds for refusal, however appropriate mitigation must be considered – <i>e.g.</i> maximise distance from pollution source, proven ventilation systems, parking considerations, winter gardens, internal layout considered and internal pollutant emissions minimised.

APEC Level	Applicable Range Annual Average NO <sub>2</sub>	Applicable Range PM <sub>10</sub>	Recommendation
C	>5% above national objective	Annual Mean: > 5% above national objective 24-hour Mean: >1 day more than the national objective	Refusal on air quality grounds should be anticipated unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures.

### 3.4. Air Quality Neutral Assessment

In line with the Sustainable Design and Construction SPG (2014), an Air Quality Neutral Assessment (AQNA) is required for all new developments. The AQNA compares NO<sub>x</sub> and PM<sub>10</sub> emission for buildings and transport against calculated benchmarks. NO<sub>x</sub> and PM<sub>10</sub> emission for buildings and transport have been calculated based on the information in Table 3.13.

**Table 3.13 Input Parameters for AQNA**

Parameter	Value Used
Gross Internal Area (m <sup>2</sup> )	A1/A3 – 1,234, B1 (incl. Sui Generis) – 33,074 (excludes UKPN space).
Energy Centre Total NO <sub>x</sub> Emissions (kg/year)	4.45
Annual Development Generated Vehicle Trips	B1 (incl. Sui Generis) – 51,425, A1 – 1,460, A3 – 10,220

The NO<sub>x</sub> and PM<sub>10</sub> emissions calculated using the information in Table 3.13 are compared to the benchmarks provided in Table 3.14. Should a benchmark be exceeded (*i.e.* is in deficit), mitigation will be required either locally or by off-setting emissions elsewhere.

**Table 3.14 Emissions Benchmarks for AQNA**

Land Use Class	Benchmark Category	NO <sub>x</sub> Benchmark	PM <sub>10</sub> Benchmark
A1/A3	Buildings	27.9	1.6
	Transport	270.2	48.5
B1	Buildings	1018.7	58.5
	Transport	377	67.8

### 3.5. Selection of Sensitive Receptors

Defra provides guidance on locations where the air quality objectives should apply and Table 3.15 and professional judgement have been used to select receptors where likely significant exposure to pollutant concentrations may occur.

**Table 3.15** *Examples of where the Air Quality Objectives may or may not apply*

Averaging Period	Objectives Should Apply	Objectives Should Generally Not Apply
Annual mean	<p>All locations where members of the public might be regularly exposed.</p> <p>Building facades of residential properties, schools, hospitals, care homes etc.</p>	<p>Building facades of offices or other places of work where members of the public do not have regular access.</p> <p>Hotels, unless people live there as their permanent residence.</p> <p>Gardens of residential properties.</p> <p>Kerbside sites (as opposed to locations at the building façade), or any other locations where public exposure is expected to be short term.</p>
24-hour mean	<p>All locations where the annual mean objective would apply, together with hotels.</p> <p>Gardens of residential properties.</p>	<p>Kerbside sites (as opposed to locations at the building façade), or any other locations where public exposure is expected to be short term.</p>
1-hour mean	<p>All locations where the annual mean and 24 -hour mean objectives apply.</p> <p>Kerbside sites (for example, pavements of busy shopping streets)</p> <p>Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more.</p> <p>Any outdoor locations where members of the public might reasonably expected to spend one hour or longer.</p>	<p>Kerbside sites where the public would not be expected to have regular access.</p>
15-minute mean	<p>All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer.</p>	

As the approved development is for the refurbishment and a roof top extension of a commercial office space, a number of the air quality objectives do not generally apply to this land use class (see Table 3.15). The distribution of modelled receptors within the study area are identified in **Figure 4**.

### **3.6. Limitations & Assumptions**

Professional judgement has been used in the completion of the construction phase dust assessment for the Approved Development.

It is assumed that the traffic data provided by Caneparo Associates is accurate and robust to justify scoping out a detailed assessment of road traffic emissions.

The ADMS Roads and ADMS 5.2 dispersion models have been used in this assessment to assess the impact of development-generated traffic and the proposed onsite gas-fired boilers. The dispersion models rely on input data, such as traffic data and predicted emissions data, *etc.*, which may have uncertainties associated with them. The models simplify complex environments and does not always accurately reflect local micro-climatic conditions which may ultimately affect the predicted pollutant concentrations.

The assessment has been undertaken on a worst case basis, assuming no improvement in emission factors or concentrations between 2018 and the operational year of 2024. A sensitivity analysis has been undertaken, whereby emission factors and background concentrations for 2022 (an intermediary year between 2018 and 2024) have been utilised to demonstrate how the results may alter as a result of improvements in vehicles and background concentrations.

The Defra background concentrations indicate air quality conditions at ground level. These ground level concentrations have been applied to all receptors, including those at height. As a result, the concentrations are likely to be lower at the receptors at height than predicted, but the assessment presents the worst case scenario and is therefore appropriate.

## 4. Baseline Conditions

### 4.1. Defra 2017 Background Maps

The UK Air Information Resource (AIR) is operated by Defra and includes computer modelled predictions of background concentrations of air pollutants over the whole of the UK with a grid resolution of 1 km<sup>2</sup>. Background concentrations are those levels that would be expected to be observed away from specific sources of air pollutants, such as roads and industrial installations. The background information for relevant pollutants in the grid square covering the development are associated with National Grid References (NGR) 530500 181500 and 530500 180500, which are provided in Table 4.1.

**Table 4.1 Defra 2017 Background Pollutant Data Relevant to the Approved Development**

Pollutant	Pollutant Concentration (µg/m <sup>3</sup> )						
	2018	2019	2020	2021	2022	2023	2024
NGR: 530500 181500							
NO <sub>2</sub>	45.84	41.84	39.77	38.76	37.73	36.80	35.94
NO <sub>x</sub>	92.49	80.12	74.38	71.86	69.37	67.16	65.13
PM <sub>2.5</sub>	13.12	12.84	12.57	12.42	12.27	12.13	11.98
PM <sub>10</sub>	19.55	19.20	18.86	18.69	18.52	18.35	18.18
NGR: 530500 180500							
NO <sub>2</sub>	44.60	40.52	38.46	37.43	36.39	35.45	34.58
NO <sub>x</sub>	88.49	76.15	70.62	68.12	65.66	63.47	61.46
PM <sub>2.5</sub>	12.79	12.53	12.26	12.11	11.97	11.82	11.68
PM <sub>10</sub>	18.94	18.61	18.27	18.10	17.93	17.76	17.58

### 4.2. Local Air Quality Information

Between 1998 and 2000, the LBC undertook its first round of review and assessment for air quality. Following this review, it was concluded that a borough wide AQMA warranted designation due to exceedances of the AQS objectives for annual mean of NO<sub>2</sub> and PM<sub>10</sub> concentrations and 24 hour PM<sub>10</sub> concentrations, predominantly brought about by road transport emissions. The Approved Development lies within the existing AQMA (see **Figure 5**) and in close proximity to an Air Quality Focus Area (AQFA). Since then, exceedances of the objective for annual mean concentrations of NO<sub>2</sub> have persisted in many locations (most pronounced at roadside).

In addition to the LBC air quality monitoring data, monitoring data from the City of Westminster provides information on local air quality with the southern part of the road traffic model falling within this borough. Consequently, relevant information from air quality monitoring in the City of Westminster is included below.

#### 4.2.1. Local Authority Monitoring Data

LBC operates four continuous monitoring stations and undertakes passive diffusion tube monitoring at 14 locations. The City of Westminster operate eight continuous monitoring stations, with the station located on the Strand of most relevance to the assessment. The relevant monitoring locations are presented in **Figure 6**.

## Nitrogen Dioxide

Table 4.2 and Table 4.3 presents the annual mean NO<sub>2</sub> concentrations and the number of exceedances of the 1-hour NO<sub>2</sub> objective, respectively for the most representative continuous monitors.

The annual mean NO<sub>2</sub> objective has been exceeded at all monitoring locations between 2012 and 2018 with the exception of London Bloomsbury, which fell below the NO<sub>2</sub> objective in 2017 and 2018. The results demonstrate a general downward trend in the annual mean concentration.

As can be seen from Table 4.2, the monitoring data has been compliant with the 1-hour mean NO<sub>2</sub> objective between in all years monitored at London Bloomsbury and Shaftesbury Avenue. Euston Road and the Strand indicate exceedance of the 1-hour mean objective in all years. Swiss Cottage indicated exceedance in 2012-2013 and 2016, complying with the objective for the remaining years.

**Table 4.2** *Continuous Monitoring – Annual Mean NO<sub>2</sub>*

Site ID	X, Y	Type	Annual Mean (µg/m <sup>3</sup> )						
			2012	2013	2014	2015	2016	2017	2018
London Bloomsbury	530123, 182014	UB	55	44	45	48	42	38	36
Swiss Cottage	526629, 184391	K	70	63	66	61	66	53	54
Euston Road	529878, 182648	R	106	106	98	90	88	83	82
Shaftesbury Avenue	530060, 181290	R	71	74	59	-	-	-	-
Strand	530785, 180911	R	-	-	-	122	101	92	88

**Bold** indicates an exceedance of the annual mean objective.  
Data capture was greater than 90% at all monitoring locations in 2017.  
Notes: UB = Urban Background, K = Kerbside, R = Roadside

**Table 4.3** *Continuous Monitoring – 1-Hour Mean NO<sub>2</sub>*

Site ID	X, Y	Type	Number of Exceedances of 1-Hour Mean NO <sub>2</sub> Objective Threshold of 200µg/m <sup>3</sup> (<18 per/yr)						
			2012	2013	2014	2015	2016	2017	2018
London Bloomsbury	530123, 182014	UB	1	0	0	0	0	0	0
Swiss Cottage	526629, 184391	K	43	42	14	11	37	1	2
Euston Road	529878, 182648	R	294	404	221	54	39	25	18
Shaftesbury Avenue	530060, 181290	R	12	10	2	-	-	-	-
Strand	530785, 180911	R	-	-	-	284	235	26	34

**Bold** indicates an exceedance of the annual mean objective.  
Data capture was greater than 90% at all monitoring locations in 2017.  
Notes: UB = Urban Background, K = Kerbside, R = Roadside

Table 4.4 presents a summary of the diffusion tube monitoring collected by LBC between 2012 and 2018.

A number of the monitoring locations exceed the annual mean NO<sub>2</sub> AQS objective between 2012 and 2018, although all locations demonstrate a downward trend towards the objective in each of the years except 2017. Three locations, CA24 Chetwynd Road, CA25 Emmanuel Primary and WITT Wittanhurst Lane, all exceeded the objective in all years except 2018, with the most recent results falling just below the annual mean NO<sub>2</sub> objective. One site, CA7 Frognal Way, indicates compliance with the annual mean NO<sub>2</sub> objective across the monitoring period, with CA6 Wakefield Gardens marginally exceeding the objective once in 2013 and CA10 Tavistock Garden exceeding the objective to 2015 and falling below the objective from 2016.

**Table 4.4 Diffusion Tube Monitoring – Annual Mean NO<sub>2</sub>**

Site ID	X, Y	Type	Annual Mean (µg/m <sup>3</sup> )						
			2012	2013	2014	2015	2016	2017	2018
CA4 -Euston Road	530110, 182795	R	<b>82.1</b>	<b>107.8</b>	<b>89.7</b>	<b>86.8</b>	<b>82.7</b>	<b>92.5</b>	<b>69.2</b>
CA6 -Wakefield Gardens	530430, 182430	UB	39.3	<b>40.3</b>	36.4	35.8	31.3	-	26.7
CA7 - Frognal Way	526213, 185519	UB	28.9	32.0	28.6	27.8	27.9	32.3	22.1
CA10 - Tavistock Garden	529880, 182334	UB	<b>40.1</b>	<b>49.4</b>	<b>46.5</b>	<b>44.6</b>	39.7	-	35.4
CA11 - Tottenham Court Road	529568, 181728	K	<b>83.3</b>	<b>88.1</b>	<b>86.8</b>	<b>85.6</b>	<b>83.6</b>	-	<b>65.7</b>
CA15 - Swiss Cottage	526633, 184392	K	<b>72.7</b>	<b>83.1</b>	<b>74.3</b>	<b>69.3</b>	<b>73.9</b>	-	<b>62.3</b>
CA16 - Kentish Town Road	529013, 185102	R	<b>59.0</b>	<b>65.3</b>	<b>57.8</b>	<b>63.6</b>	<b>58.7</b>	<b>74.9</b>	<b>54.7</b>
CA17 -47 Fitzjohn's Road	526547, 185125	R	<b>61.2</b>	<b>65.2</b>	<b>60.3</b>	<b>55.8</b>	<b>56.4</b>	-	<b>48.1</b>
CA20 - Brill Place	529914, 183147	R	<b>50.0</b>	<b>49.4</b>	<b>52.3</b>	<b>48.9</b>	<b>47.5</b>	<b>57.3</b>	<b>41.1</b>
CA21 - Bloomsbury Street	529962, 181620	R	<b>71.7</b>	<b>76.1</b>	<b>80.8</b>	<b>71.4</b>	<b>72.2</b>	<b>80.7</b>	<b>59.4</b>
CA23 - Camden Road	529173, 184129	R	<b>67.4</b>	<b>77.9</b>	<b>72.2</b>	<b>63.3</b>	<b>61.7</b>	<b>75.4</b>	<b>55.6</b>
CA24 - Chetwynd Road	528722, 185950	R	<b>43.7</b>	<b>47.8</b>	<b>44.8</b>	<b>46.5</b>	<b>42.0</b>	<b>55.0</b>	39.7
CA25 -Emmanuel Primary	525325, 185255	R	<b>45.9</b>	<b>57.9</b>	<b>48.4</b>	<b>47.7</b>	<b>52.2</b>	<b>55.2</b>	39.8
WITT -Wittanhurst Lane	528213, 187203	R	-	<b>53.1</b>	<b>48.3</b>	<b>45.0</b>	<b>43.1</b>	<b>48.9</b>	37.4

**Bold** indicates an exceedance of the annual mean objective.  
Data capture was less than 75% at all monitoring locations in 2017, therefore caution should be taken when using this data.

Site ID	X, Y	Type	Annual Mean ( $\mu\text{g}/\text{m}^3$ )						
			2012	2013	2014	2015	2016	2017	2018
Notes: UB = Urban Background, K = Kerbside, R = Roadside									

### Particulate Matter

Table 4.5 and Table 4.6 presents the annual mean  $\text{PM}_{10}$  concentrations and the number of exceedances of the 24-hour  $\text{PM}_{10}$  objective, respectively for the most representative continuous monitors.

Annual mean  $\text{PM}_{10}$  concentrations (Table 4.5) at all monitoring locations have been well below the air quality objective since 2012.

As can be seen from Table 4.6, the measured data indicates compliance with the short term air quality objective for  $\text{PM}_{10}$ .

**Table 4.5** *Continuous Monitoring – Annual Mean  $\text{PM}_{10}$*

Site ID	X, Y	Type	Annual Mean ( $\mu\text{g}/\text{m}^3$ )						
			2012	2013	2014	2015	2016	2017	2018
London Bloomsbury	530123, 182014	UB	19	18	20	22	20	19	17
Swiss Cottage	526629, 184391	K	23	21	22	20	21	20	21
Euston Road	529878, 182648	R	-	-	29	18	24	20	22.6
Shaftesbury Avenue	530060, 181290	R	29	29	25	22	18	-	-
<p><b>Bold</b> indicates an exceedance of the annual mean objective.</p> <p>Data capture was greater than 90% at all monitoring locations in 2017.</p> <p>Notes: UB = Urban Background, K = Kerbside, R = Roadside</p>									

**Table 4.6** *Continuous Monitoring – 24-Hour Mean  $\text{PM}_{10}$*

Site ID	X, Y	Type	Number of Exceedances of 24-Hour Mean $\text{PM}_{10}$ Objective Threshold of $50\mu\text{g}/\text{m}^3$ (<35 per/yr)						
			2012	2013	2014	2015	2016	2017	2018
London Bloomsbury	530123, 182014	UB	10	4	11	6	9	6	1
Swiss Cottage	526629, 184391	K	21	8	12	8	7	8	4
Euston Road	529878, 182648	R	-	-	5	5	10	3	2
Shaftesbury Avenue	530060, 181290	R	18	17	16	4	-	-	-
<p><b>Bold</b> indicates an exceedance of the annual mean objective.</p> <p>Data capture was greater than 90% at all monitoring locations in 2017.</p> <p>Notes: UB = Urban Background, K = Kerbside, R = Roadside</p>									

Table 4.7 presents the annual mean PM<sub>2.5</sub> concentrations for three representative continuous monitors.

Annual mean PM<sub>2.5</sub> concentrations (Table 4.7) at all monitoring locations have been well below the air quality objective since 2012.

**Table 4.7** *Continuous Monitoring – Annual Mean PM<sub>2.5</sub>*

Site ID	X, Y	Type	Annual Mean (µg/m <sup>3</sup> )						
			2012	2013	2014	2015	2016	2017	2018
London Bloomsbury	530123, 182014	UB	-	-	-	11	12	13	10
Swiss Cottage	526629, 184391	K	-	-	-	12	15	16	11
Euston Road	529878, 182648	R	-	-	-	17	17	14	15.6

**Bold** indicates an exceedance of the annual mean objective.  
Data capture was greater than 90% at all monitoring locations in 2017.  
Notes: UB = Urban Background, K = Kerbside, R = Roadside

#### 4.2.2. London Atmospheric Emissions Inventory

The LAEI includes dispersion model results for the whole of London for 2016 and 2020 (updated in April 2017). Estimated ground level annual mean concentrations for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in the vicinity of the Site are presented in **Figures 7 to 12**.

**Figure 7** presents the 2016 LAEI baseline concentrations for annual mean NO<sub>2</sub> in the vicinity of the Site. This indicates elevated ground level concentrations in excess of 50µg/m<sup>3</sup> along the A4200 Kingsway, which is located to the east of the Site. Within the Site boundary, baseline annual mean NO<sub>2</sub> concentrations are generally above 40µg/m<sup>3</sup> and, therefore, there is potential that future users of the Approved Development will be exposed to annual mean NO<sub>2</sub> concentrations that exceed the annual mean AQS objective.

To determine compliance with the 1-hour mean objective for NO<sub>2</sub> the approach detailed in Defra's LAQM.TG(16) guidance has been followed. It suggests that where annual mean NO<sub>2</sub> concentrations do not exceed 60µg/m<sup>3</sup> then it is likely that exceedances of the 1-hour mean concentrations do not occur. The 2016 LAEI baseline data indicates that within the Site boundary annual mean NO<sub>2</sub> concentrations are below 60µg/m<sup>3</sup>, therefore it is unlikely that the 1-hour mean AQS objective at the Approved Development would be exceeded.

**Figure 8** presents the 2016 LAEI baseline concentrations for annual mean PM<sub>10</sub> in the vicinity of the Site. This indicates ground level concentrations are around 40µg/m<sup>3</sup> along The A4200 Kingsway, which is located to the east of the Site, and exceed 50µg/m<sup>3</sup> in a couple of locations. Within the Site boundary estimated annual mean PM<sub>10</sub> concentrations are generally below 30µg/m<sup>3</sup>. It is therefore unlikely that future users of the Approved Development would be exposed to annual mean PM<sub>10</sub> concentrations that exceed the annual mean AQS objective.

**Figure 9** presents the 2016 LAEI baseline concentrations for annual mean PM<sub>2.5</sub> in the vicinity of the Site. This indicates ground level concentrations less than 22µg/m<sup>3</sup> along the A4200 Kingsway, which is located to the east of the Site, although exceed 22µg/m<sup>3</sup> in a couple of locations. Within

the Site boundary estimated annual mean PM<sub>2.5</sub> concentrations are generally around or below 16µg/m<sup>3</sup>. It is therefore unlikely that future users of the Approved Development would be exposed to annual mean PM<sub>2.5</sub> concentrations that exceed the annual mean AQS objective.

Based up on GLA forecasts on expected emission reductions **Figures 10, 11** and **12** (taken from the 2020 LAEI mapped data) estimated ground level annual mean concentrations for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in 2020 are predicted to be lower than those presented in **Figures 7, 8, and 9** for 2016. With the introduction of the Real Driving Emissions (RDE) testing and the likely improvement in cleaner vehicle technologies (in particular EURO 6 (VI) a, b, c and d fleet categories – which are substantially cleaner than the previous EURO 5 (V), and the uptake of electric/hybrid vehicles) delivering improvements in vehicle emissions, in particular NO<sub>x</sub>, then ambient pollutant concentrations could potentially be lower in 2020 than is currently predicted by the 2016 LAEI baseline. Although, it is important to note that such improvements would depend upon traffic growth, congestion and the implementation of government/ local authority air quality initiatives and policy.

## 5. Effects Appraisal and Site Suitability

### 5.1. Construction

#### 5.1.1. Assessment of Potential Dust Emission Magnitude

The likely magnitude of dust emissions from the Approved Development for the four main activities has been assessed, as identified in Table 5.1.

**Table 5.1 Predicted Magnitude of Dust Emissions from Approved Development**

Activity	Magnitude	Justification
Demolition	Small	The existing building is to be retained, with the majority of works to be undertaken restricted to internal refurbishment. However, some of the existing façade will be removed, but retained for re-use. There is likely to be some small scale demolition relating to existing concrete slabs. This work will be limited and is expected to be well below 20,000m <sup>3</sup> , as per the IAQM thresholds.
Earthworks	Small	The total site area is approximately 3,000m <sup>2</sup> , which is categorised as medium in accordance with the IAQM guidance document. However, given the proposals are predominantly for the refurbishment of the existing building, the earthwork activities are likely to be minimal and limited to the area surrounding the existing building footprint. It is expected that there would be less than 5 heavy earth moving vehicles operational at any one time, and the volume of material generated would be less than 20,000 tonnes. On this basis the magnitude of impact associated with the earthworks have been categorised as small.
Construction	Small	The Approved Development comprises the internal refurbishment of the existing buildings, and rooftop extension. It is estimated that the total proposed building volume will be less than 25,000m <sup>3</sup> . It is anticipated that the building will be constructed using steel, therefore the potential for dust generation is low.
Trackout	Small	Based up on the proposals, it is reasonable to assume that construction trips would be low. It has been estimated that the number of HGV movements in a typical day would be less than 10.

#### 5.1.2. Sensitivity of the Area

A wind rose for London City Airport for 2018, provided in **Appendix D**, indicates that the prevailing wind direction is predominantly from the south, south west. Therefore, existing receptors that are located to the north and north east are most likely to fall within the area of influence from dust emissions generated by the construction phase at the site.

The majority of dust generated by the construction stage is likely to be deposited in close proximity to the source (within 350m) – **Figure 13** indicates the construction zone of influence. The majority of existing buildings surrounding the Site are of commercial (office) or retail/restaurants use (within 20m), although residential receptors are present opposite along Wild Street. There are

no ecological receptors located within 50m of the Site, or within 500m of the likely construction traffic route and therefore consideration of these receptors has been scoped out.

The maximum 2018 PM<sub>10</sub> background concentration for the Site 19.55µg/m<sup>3</sup>, which is well below the annual mean air quality objective.

The sensitivity of the area to each of the previously identified impact types associated with the Approved Development are identified in Table 5.2.

**Table 5.2 Sensitivity of Receptors to Dust Emission Effects**

Impact Type	Sensitivity of Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Low
Ecological	N/A	N/A	N/A	N/A

The sensitivity of the surrounding area for dust soiling is classified as high, and for human health the sensitivity is classified as low.

### 5.1.3. Risk of Impact

To determine the risk of impacts prior to the implementation of mitigation the dust emission magnitude and the sensitivity of the area have been combined and professional judgement applied. Table 5.3 below summaries the potential risk of impacts during the construction phase.

**Table 5.3 Risk of Dust Related Impacts from the Approved Development**

Impact Type	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low Risk	Low Risk	Low Risk	Low Risk
Human Health	Negligible	Negligible	Negligible	Negligible
Ecological	N/A	N/A	N/A	N/A

The risk of dust related impacts from the Approved Development on existing receptors in the vicinity of the Site is Low Risk without the implementation of mitigation. The risk of dust related impacts on human health during the construction phase is Negligible.

### 5.1.4. Construction Road Traffic & Non-Road Mobile Machinery (NRMM)

The greatest impact on air quality due to construction traffic and NRMM is likely to be along roads in the vicinity of the Site. It is likely that construction traffic will enter the Site via the Kemble Street or Keeley Street from the A4200 Kingsway. It is likely that the volume of construction traffic will be low compared to the existing traffic flows.

Based on the current local air quality in the area, the proximity of sensitive receptors, including residential receptors, to the roads likely to be used by construction vehicles and the likely number of construction vehicles (estimated to be less than 10 per day) the impacts are therefore considered to be negligible.

## 5.2. Operational Phase (Non-Sensitivity Analysis)

Full results of the dispersion modelling are presented in **Appendix F** and a summary is provided below.

As the proposals are for the refurbishment and roof top extension of a commercial office space, a number of the air quality objectives do not generally apply to this land use class (see Table 3.14). However, these objectives are applicable to long-term receptors and have been included in the assessment.

### 5.2.1. Annual Mean NO<sub>2</sub> Concentrations

The objective for annual mean NO<sub>2</sub> concentrations is 40µg/m<sup>3</sup>. In 2018, the annual mean NO<sub>2</sub> concentrations at all existing receptor locations exceeded the AQS objective, however this is inevitable as the background concentration (*i.e.* without the Approved Development) exceeds the objective. The highest predicted concentration is 64.2 µg/m<sup>3</sup> at existing receptor E7 (The Wellington Public House), however this is not considered to be a long-term receptor with exposure over the short-term more relevant. The highest predicted concentration at a long-term receptor is 51.8 µg/m<sup>3</sup> at existing receptor E3 (St Clement Danes C of E Primary School).

In 2024, with the Approved Development operational, the results indicate that all existing receptor locations remain above the AQS objective – however the 2018 background concentrations applied exceeds of the objective whether the Approved Development comes forward or not. The highest predicted concentration is 65.3µg/m<sup>3</sup> at existing receptor E7 (The Wellington Public House), however this is not considered to be a long-term receptor with exposure over the short-term more relevant. The highest predicted concentration at a long-term receptor is 52.2 µg/m<sup>3</sup> at existing receptor E3 (St Clement Danes C of E Primary School).

The greatest predicted change as a result of the Approved Development is 0.3 µg/m<sup>3</sup> at existing receptor E1 (ground floor commercial receptor along the A4022 Kingsway). Although the impact magnitude is classified as moderate adverse, given the nature of the use-class the 1-hour mean objective is considered most applicable. Therefore, although the impact at existing receptor E1 is classified as moderate adverse, installing mitigation to protect existing users from long term impacts is not required. The impact at all remaining existing receptors is classified as negligible.

Within the Approved Development, the highest predicted concentration is 56.4 µg/m<sup>3</sup>, with concentrations reducing with height. However, all concentrations fall above the AQS objective (as a result of the 2018 background concentration already exceeding the objective) of 40 µg/m<sup>3</sup> and therefore would be classified as APEC C in line with Table 3.12. However, as the development is for office accommodation, retail and flexible Class B1/B1 and events space, the long term objective is not generally applicable with the short-term objective more relevant for this type of receptor (see Table 3.14).

### 5.2.2. Hourly Mean NO<sub>2</sub> Concentrations

The objective for hourly mean NO<sub>2</sub> concentrations is 200 µg/m<sup>3</sup> to be exceeded no more than 18 times a year. In 2018, 1-hour concentrations at all existing receptors fall within the AQS objective, with the highest predicted concentration being 182.6 µg/m<sup>3</sup> at existing receptor E7 (The Wellington Public House).

In 2024, 1-hour concentrations at all existing and new receptors fall within the AQS objective, with the highest predicted concentration being 187.7 µg/m<sup>3</sup> at existing receptor E7 (The Wellington

Public House). The greatest predicted concentration for a new receptor is  $142.9\mu\text{g}/\text{m}^3$  at P2-1 (Ground Floor façade facing Kingsway).

The greatest short-term PC as a result of the Approved Development is  $2.1\mu\text{g}/\text{m}^3$  at new receptor P-4 and P-5 (commercial receptors from ground floor to 18<sup>th</sup> floor to the west of the property on the tower), which is less than  $20\mu\text{g}/\text{m}^3$  (*i.e.* 10% of the short-term objective). Therefore, the short-term PCs associated with the Approved Development is not significant and mitigation is not required.

### 5.2.3. Annual Mean PM<sub>10</sub> Concentrations

The objective for annual mean PM<sub>10</sub> concentrations is  $40\mu\text{g}/\text{m}^3$ . In 2018, the annual mean PM<sub>10</sub> concentrations at all existing receptors were below the AQS objective. The highest predicted concentration is  $22.6\mu\text{g}/\text{m}^3$  at existing receptor E8 (The Delaunay on the Strand), although this is not considered to be a long-term receptor with exposure over the short-term more relevant. The highest predicted concentration at a long-term receptor being  $20.6\mu\text{g}/\text{m}^3$  at existing receptor E3 (St Clement Danes C of E Primary School).

In 2024, with the Approved Development operational, the results indicate that all existing receptor locations remain below the AQS objective. The highest predicted concentration is  $21.8\mu\text{g}/\text{m}^3$  at existing receptor E8 (The Delaunay on the Strand), with the highest predicted concentration at a long-term receptor being  $19.7\mu\text{g}/\text{m}^3$  at existing receptor E3 (St Clement Danes C of E Primary School).

The Approved Development results in negligible changes in PM<sub>10</sub> concentration at all existing receptors, and therefore the impact at all existing receptors is classified as negligible.

Within the Approved Development, the highest predicted concentration is  $20.6\mu\text{g}/\text{m}^3$ , with concentrations reducing with height. Therefore, all concentrations fall below the AQS objective of  $40\mu\text{g}/\text{m}^3$ . Nevertheless, as the development is for office accommodation the long term objective is not generally applicable with the short-term objective more relevant for this type of receptor (see Table 3.14).

### 5.2.4. Daily Mean PM<sub>10</sub> Concentrations

The objective for daily mean PM<sub>10</sub> concentrations is  $50\mu\text{g}/\text{m}^3$  to be exceeded no more than 35 times a year. The results indicate that concentrations at both existing and new receptors will comply with the objective in 2024 both with and without the Approved Development. The impact on daily mean PM<sub>10</sub> concentrations at existing receptors is considered negligible.

### 5.2.5. Annual Mean PM<sub>2.5</sub> Concentrations

The objective for annual mean PM<sub>2.5</sub> concentrations is  $25\mu\text{g}/\text{m}^3$ . In 2018, the annual mean PM<sub>2.5</sub> concentrations at all existing receptors were below the AQS objective. The highest predicted concentration is  $15.1\mu\text{g}/\text{m}^3$  at existing receptor E8 (The Delaunay on the Strand), although this is not considered to be a long-term receptor with exposure over the short-term more relevant. The highest predicted concentration at a long-term receptor being  $13.8\mu\text{g}/\text{m}^3$  at existing receptor E3 (St Clement Danes C of E Primary School).

In 2024, with the Approved Development operational, the results indicate that all existing receptor locations remain below the AQS objective. The highest predicted concentration is  $14.4\mu\text{g}/\text{m}^3$  at existing receptor E8 (The Delaunay on the Strand), with the highest predicted concentration at a long-term receptor being  $13.0\mu\text{g}/\text{m}^3$  at existing receptor E3 (St Clement Danes C of E Primary School).

The Approved Development results in negligible changes in PM<sub>10</sub> concentration at all existing receptors, and therefore the impact at all existing receptors is classified as negligible.

Within the Approved Development, the highest predicted concentration is 13.6 µg/m<sup>3</sup>, with concentrations reducing with height. Therefore, all concentrations fall below the AQS objective of 20 µg/m<sup>3</sup>. Nevertheless, as the development is for office accommodation the long term objective is not generally applicable with the short-term objective more relevant for this type of receptor (see Table 3.14).

### 5.2.6. Sensitivity Test

The following sensitivity test is also included in the assessment:

*2022 Background Concentrations and Emission Factors have been used to indicate a minor improvement in emissions and background concentrations over time.*

The results of the sensitivity test are given in **Appendix G**.

In summary, the sensitivity test using the 2022 background concentrations and emission factors gives lower concentrations at all existing and new receptors for both long-term and short-term pollutant concentrations.

The greatest change is seen in the long-term NO<sub>2</sub> concentrations, which are all predicted to be closer to the annual mean AQS objective of 40µg/m<sup>3</sup> with the Approved Development operational, however still exceed the objective. The long-term receptors E3 to E5 range between 40.2µg/m<sup>3</sup> and 41.6µg/m<sup>3</sup>, however the impact of the development remains negligible. The predicted annual mean NO<sub>2</sub> concentration at existing receptor E9 (Marconi House) falls below the AQS objective at 37.9µg/m<sup>3</sup>.

In terms of the 1-hour mean objective for NO<sub>2</sub>, there remains no predicted exceedances at any existing or new receptors. The annual mean concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> remain within the AQS objective for all receptors and within the objective for daily mean PM<sub>10</sub>. Impacts, therefore, remain negligible.

### 5.2.7. Air Quality Neutral Assessment

A summary of the findings of the AQNA are presented in Table 5.4 below.

**Table 5.4 Summary of AQNA**

Category	Parameter	NO <sub>x</sub> Emissions	PM <sub>10</sub> Emissions
Building Emissions	Benchmark	1046.6	60.1
	Development	4.4	0
	<b>Difference</b>	<b>-1042.1</b>	<b>-60.1</b>
Transport Emissions	Benchmark	647.3	116.3
	Development	172	30.9
	<b>Difference</b>	<b>-475.3</b>	<b>-85.4</b>

The Approved Development was found to be compliant in relation to building and transport emissions when compared to the relevant benchmarks. The Approved Development is, therefore, air quality neutral and mitigation or additional off-setting is not required.

## 6. Mitigation

### 6.1. Construction Phase

As dust risk has been assessed to be low to negligible, parts c), d) and e) of planning condition no. 16 are not required.

Nevertheless, the IAQM guidelines provide an indication of standard mitigation measures that would be appropriate for inclusion within the Approved Development, based on the low level of risk of dust related impacts identified for each of the activities. Consequently, the following mitigation measures should be incorporated into the Approved Development, and delivered through the implementation of a Construction Environment Management Plan (CEMP).

Mitigation measures that are generic to each of the activities, and therefore should be implemented for the duration of the construction related works where applicable are identified in Table 6.1, whilst activity specific mitigation measures are identified in Table 6.2.

**Table 6.1 Mitigation to be implemented during the Construction Phase**

Development Element	Mitigation Measure
Communication	<p>Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.</p> <p>Display the head or regional office contact information.</p>
Planning	<p>Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the measures recommended in this table.</p>
Site Management	<p>Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</p> <p>Make the complaints log available to the local authority when asked.</p> <p>Record any exceptional incidents that cause dust and/or emissions, either on- or off- site, and the action taken to resolve the situation in the log book.</p>
Monitoring	<p>Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the site boundary, with cleaning provided if necessary.</p> <p>Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.</p> <p>Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.</p>

Development Element	Mitigation Measure
Preparing and Maintaining the Site	<p>Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.</p> <p>Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.</p> <p>Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.</p> <p>Avoid site run-off of water or mud.</p> <p>Keep site fencing, barriers and scaffolding clean using wet methods.</p> <p>Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.</p> <p>Cover, seed or fence stockpiles to prevent wind whipping.</p>
Operating Vehicle/ Vehicle Movements	<p>Ensure all vehicles switch off engines when stationary – no idling vehicles.</p> <p>Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</p> <p>Impose and signpost a maximum speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).</p>
Operations	<p>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</p> <p>Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</p> <p>Use enclosed chutes and conveyors and covered skips.</p> <p>Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.</p> <p>Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.</p>
Waste Management	Avoid bonfires and burning of waste materials.

**Table 6.2 Activity Specific Mitigation Measures to be implemented during the Construction Phase**

Development Element	Mitigation Measure
Demolition	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
Earthworks	Only remove the cover in small areas during work and not all at once.

Development Element	Mitigation Measure
Construction	<p>Avoid scabbling (roughening of concrete surfaces) if possible.</p> <p>Ensure sand and other aggregates are stored in bunds in areas that are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.</p>
Trackout	<p>Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.</p> <p>Avoid dry sweeping of large areas.</p> <p>Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.</p> <p>Record all inspections of haul routes and any subsequent action in a site log book.</p> <p>Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</p>

### 6.1.1. Residual Effects

The residual effects of dust and PM<sub>10</sub> generated by construction activities, following the application of the standard mitigation measures described above and good site practice, is not significant.

The residual effects of emissions to air from construction vehicles and NRMM on local air quality is not significant, following the implementation of the recommended mitigation measures.

## 6.2. Operational Phase

### 6.2.1. Mitigation

The results indicate that the impact of the Approved Development at all existing receptors, with the exception of existing receptor E1 (ground floor receptor along the A4200 Kingsway (London School of Economics) – see **Figure 4**) are classified as negligible, therefore do not warrant mitigation. The impact of the Approved Development at existing receptor E1 is classified as moderate adverse, primarily due to the existing elevated baseline. However, the 1-hour mean objective is considered most applicable and, therefore, installing mitigation to protect existing users from long term impacts is not required.

Within the Approved Development, all predicted concentrations are above the AQS objective (as a result of the 2018 background concentration already exceeding the objective) of 40 µg/m<sup>3</sup> and are therefore classified as APEC C. However, as the Approved Development is for office accommodation, retail and flexible Class B1/B1 and events space the long term objective is not generally applicable with the short-term objective more relevant for this type of receptor (see Table 3.14), therefore mitigation to protect future users from long term impacts is not required.

There are no predicted exceedances of the hourly mean NO<sub>2</sub> objective of 200µg/m<sup>3</sup>, and the greatest short-term PC as a result of the Approved Development is less than 20µg/m<sup>3</sup> (*i.e.* 10% of the short term objective). Therefore, the short-term PCs of the Approved Development is not significant and mitigation is not required.

With respect to particulates, the operation of the proposed gas-fired boilers are not expected to contribute to emissions of PM<sub>10</sub> and PM<sub>2.5</sub>. No exceedances are predicted as a result of the vehicle

emissions on PM<sub>10</sub> and PM<sub>2.5</sub> concentrations, and impacts are identified as negligible. Therefore, mitigation is not required and parts a) and b) of planning condition no. 16 are not required.

Overall, the assessment (utilising 2018 background concentrations and vehicle emissions, representing a worst case approach) indicates that site specific mitigation is not required.

However, although the assessment identifies that the impacts associated with the Approved Development are generally negligible and mitigation is not therefore required, there is an option to undertake site specific air quality monitoring at the proposed air intakes. As the background concentrations in this central London location are high and exceedances of the AQS objective in the 2018 scenario have been monitored site specific monitoring would enable the onsite NO<sub>2</sub> concentrations to be more fully understood.

#### **6.2.2. Residual Effects**

The overall residual effect for the operational phase is not significant.

## 7. Conclusion

A qualitative assessment of construction phase impacts has been carried out. There is a low risk of dust soiling and a negligible risk of fugitive PM<sub>10</sub> emissions during demolition, earthworks, construction and trackout. As the construction related dust risk is low to negligible, parts c), d) and e) of planning condition no. 16 are not required. Nevertheless, through good site practice and the implementation of standard mitigation measures in line with best practice guidance, the impact of dust and PM<sub>10</sub> releases will be minimised. The residual effect of the construction phase on air quality is therefore not significant.

A quantitative assessment of operational phase impacts has been carried out by modelling the emissions from development related traffic, using the ADMS-Roads dispersion model, and from the proposed gas-fired boilers, using the ADMS 5.2 dispersion model. The detailed road traffic assessment has been carried out to discharge the planning condition no. 16 associated with the permission for development, although it is noted that the vehicle trip generation from the Approved Development does not breach the criteria in air quality planning guidance for sites within an AQMA.

The results indicate that the impact of the Approved Development at all existing receptors, with the exception of E1 (London School of Economics) are classified as negligible, therefore themselves, not warranting mitigation. The impact of the Approved Development at existing receptor E1 is classified as moderate adverse, however, the 1-hour mean objective is most applicable, therefore, mitigation for long-term exposure is not recommended. Although NO<sub>2</sub> concentrations for new receptors within the Approved Development exceed the long-term AQS objective based on 2018 background concentrations and emission factors, the long-term objective is not generally applicable to the proposed office/retail use.

There are no predicted exceedances of the hourly mean NO<sub>2</sub> objective of 200µg/m<sup>3</sup>, and the greatest short-term PC as a result of the Approved Development is less than 20µg/m<sup>3</sup> (*i.e.* 10% of the short-term objective) and therefore mitigation is not required. Concentrations for new receptors within the Approved Development also fall within the short-term AQS objective, and no mitigation is required. The Approved Development is, therefore, suitable for its proposed office use and mitigation is not recommended. Therefore, parts a) and b) of planning condition no. 16 are not required.

With respect to PM<sub>10</sub> and PM<sub>2.5</sub> no exceedances are predicted as a result of the Approved Development. The impact at all existing receptors is classified as negligible. Therefore, mitigation is not recommended.

Using the 2018 background concentrations and vehicle emission factors, the overall residual effect of the operational phase is not significant and therefore mitigation measures identified in the pre-commencement planning condition are not required.

The Sensitivity Analysis, using background concentrations and emission factors for 2022, demonstrate that, with improvements in ambient air quality and vehicle emissions, the predicted concentrations for all pollutants are lower at the majority of receptors. However, under this scenario only one receptor falls within the long-term AQS objective for NO<sub>2</sub>. Nevertheless, the overall residual effect for the operational phase remains negligible for all pollutants and averaging periods and is therefore not significant.

With the introduction of the Real Driving Emissions (RDE) testing and the emergence of cleaner vehicle technologies (in particular EURO 6 (VI) a, b, c and d fleet categories – which indicate lower emissions than the previous EURO 5 (V), and the uptake of electric/hybrid vehicles) that deliver

improvements in vehicle emissions, in particular NO<sub>x</sub>, ambient pollutant concentrations have the potential to be lower in the opening year than those presented using the 2018 background concentrations and vehicle emissions. On this basis, utilising background concentrations and vehicle emissions from 2018 as part of this assessment is considered to be a worst-case but reasonable and robust approach.

With regard to the AQNA, the Approved Development was found to be compliant in relation to Building and Transport Emissions and is therefore air quality neutral. No mitigation or additional off-setting is required.

Overall, with the recommended mitigation measure in place (construction phase only), the proposals would be compliant with legislation and policy. Monitoring is proposed to provide confidence in the assessment by establishing the background concentration for the site, however this is not required or covered by planning condition no. 16.

Figure 1 – Site Boundary

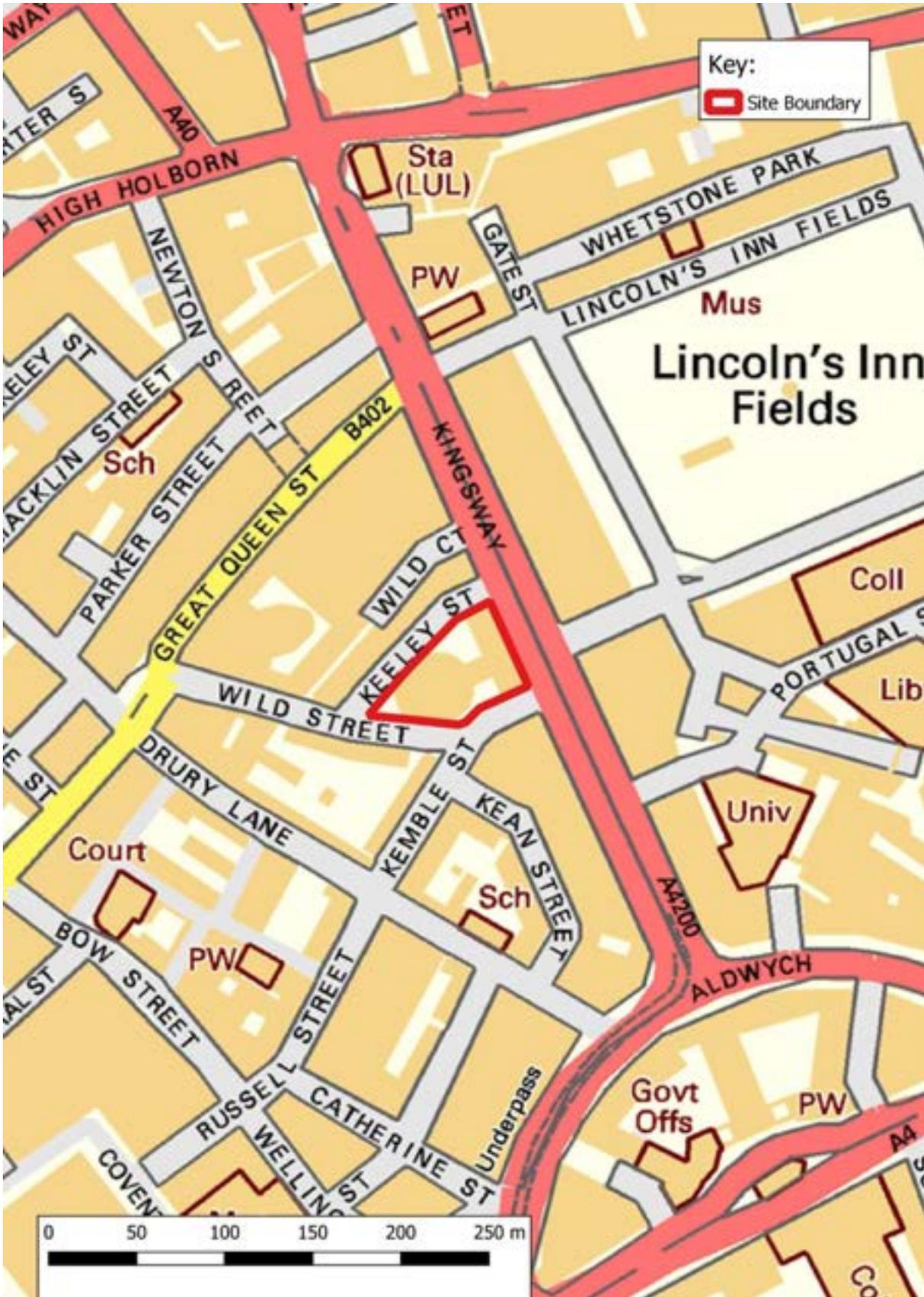
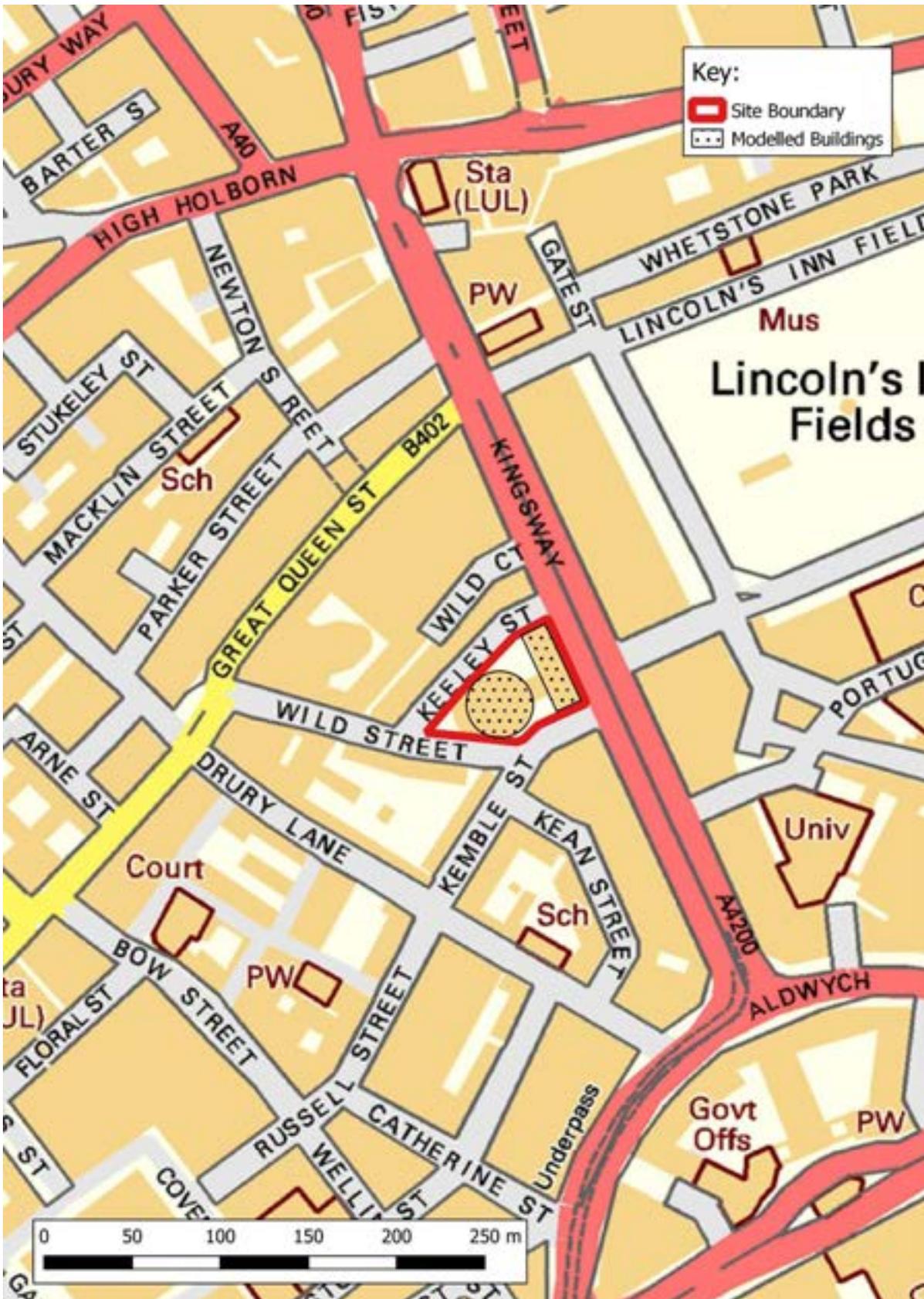
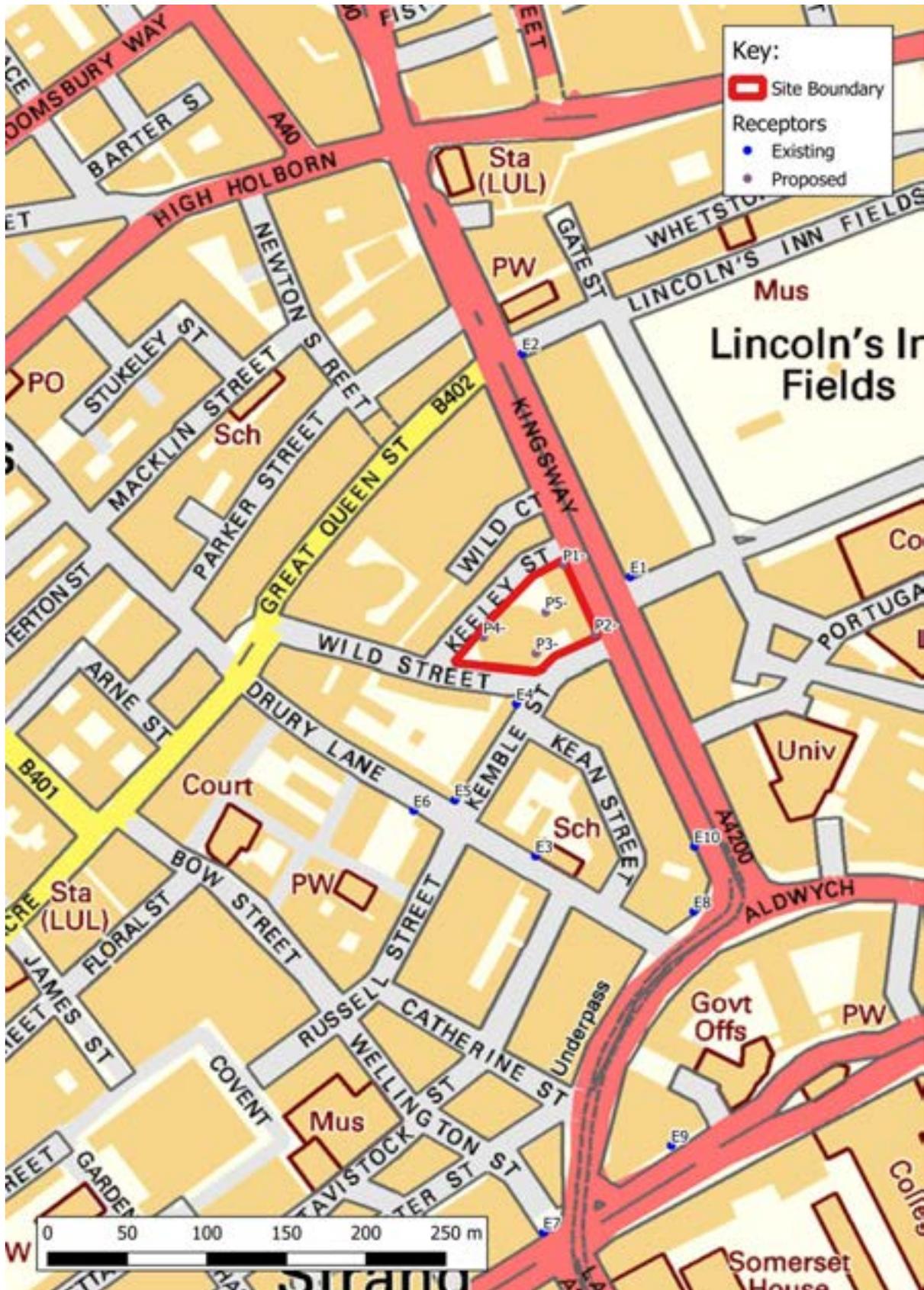




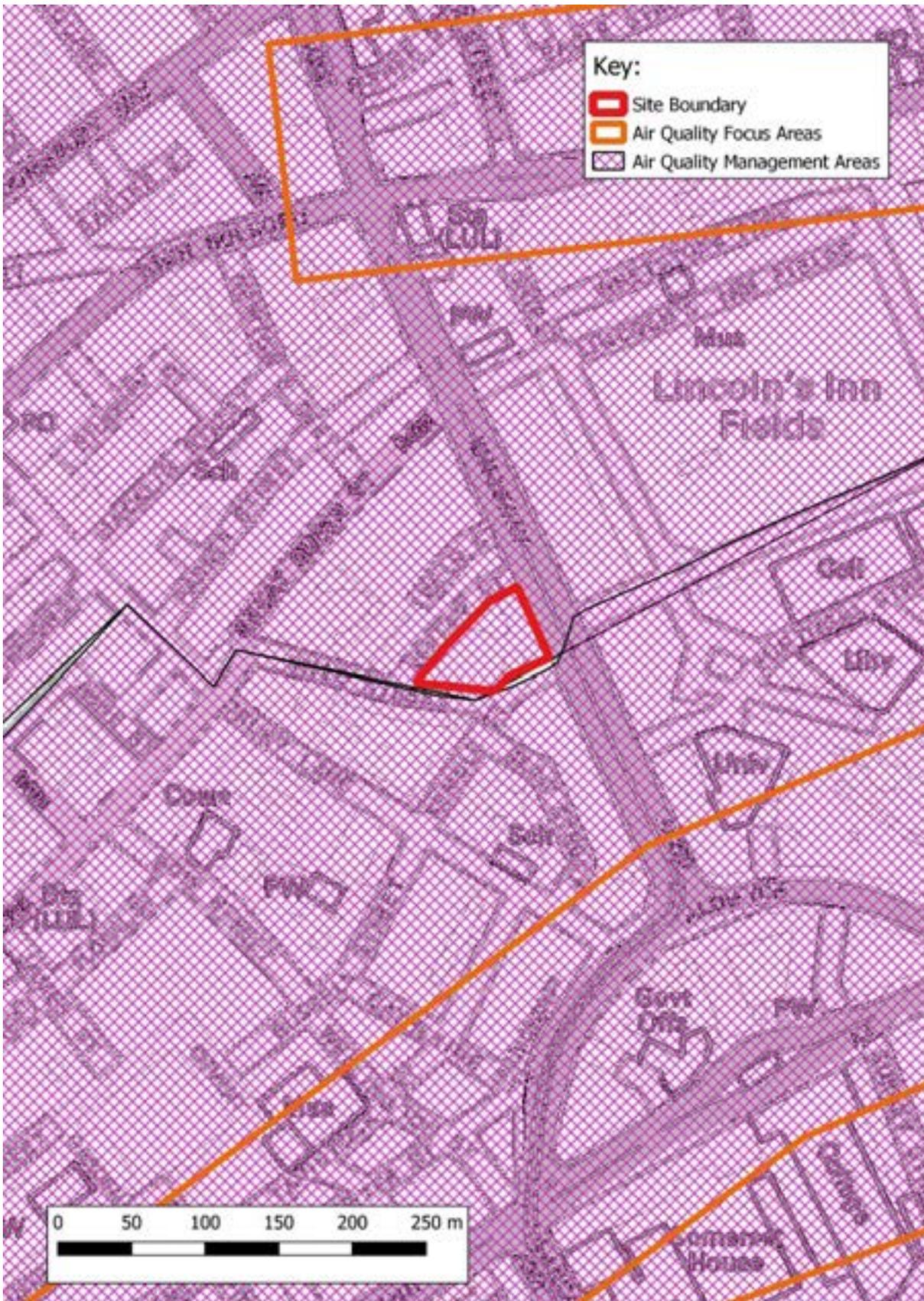
Figure 3 – Modelled Buildings



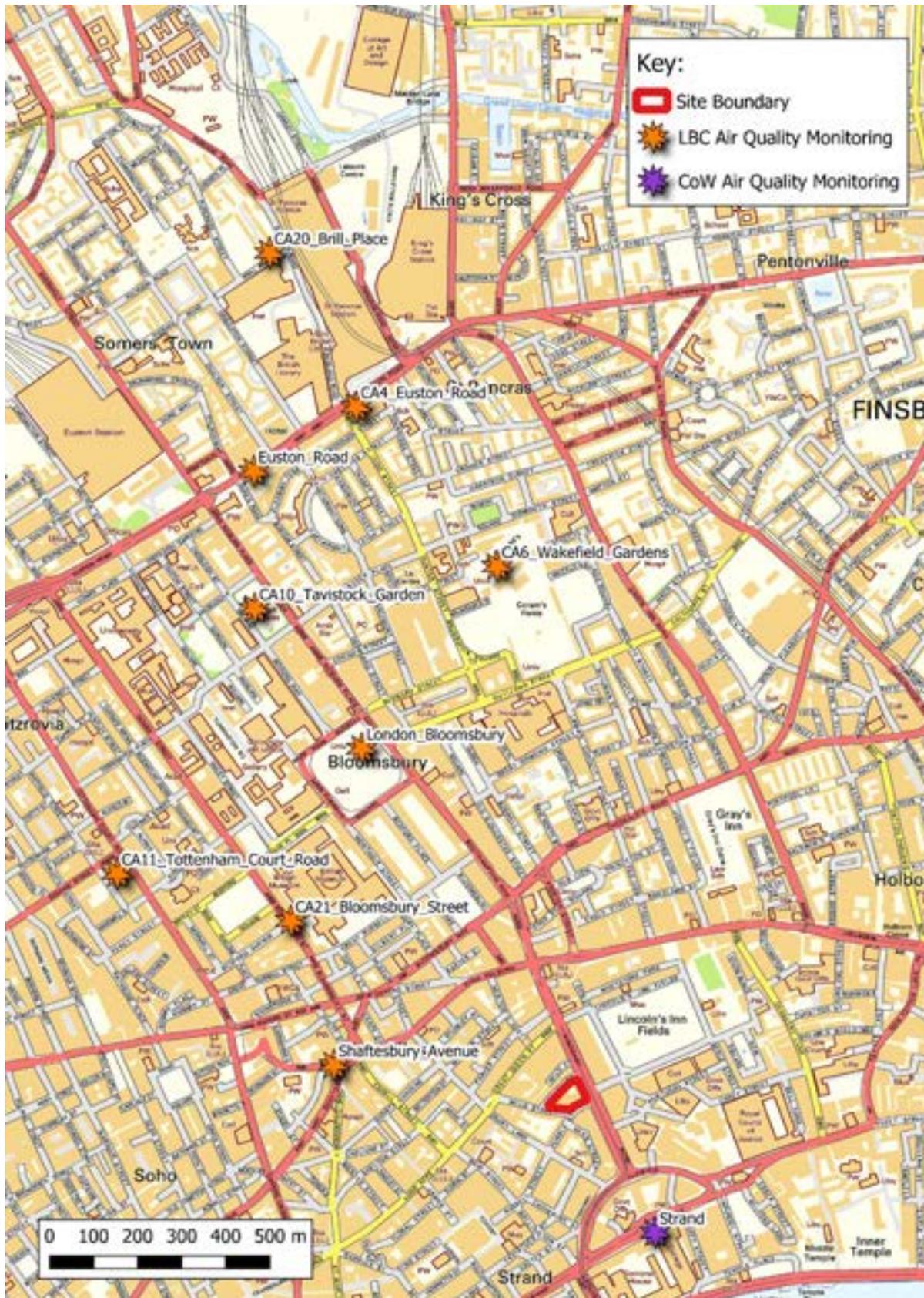
**Figure 4 – Modelled Receptors**



**Figure 5 – Air Quality Management Area & Air Quality Focus Areas**



**Figure 6 – Local Authority Monitoring Locations**



**Figure 7 – 2016 LAEI Baseline NO<sub>2</sub> Concentrations (µg/m<sup>3</sup>)**

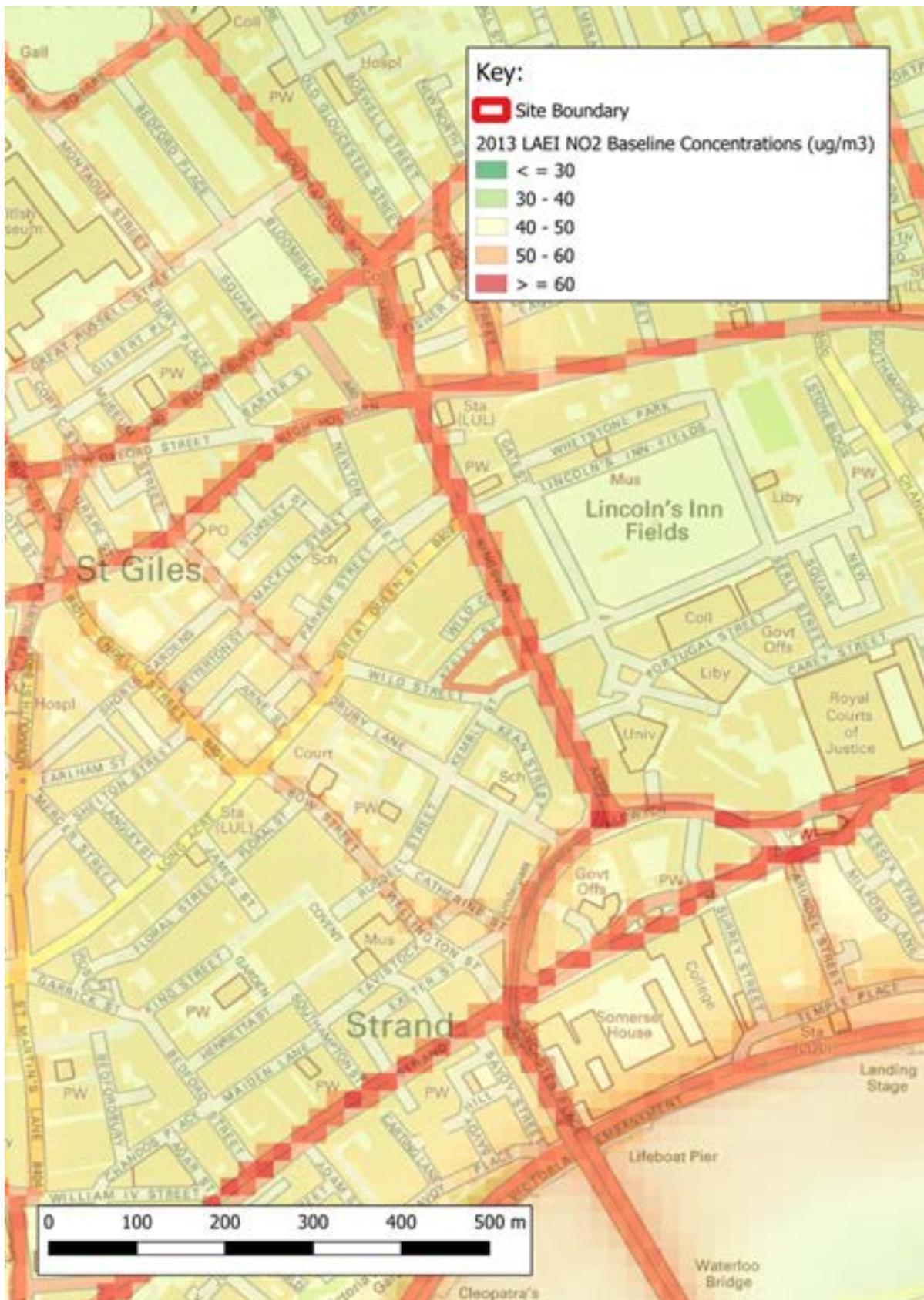
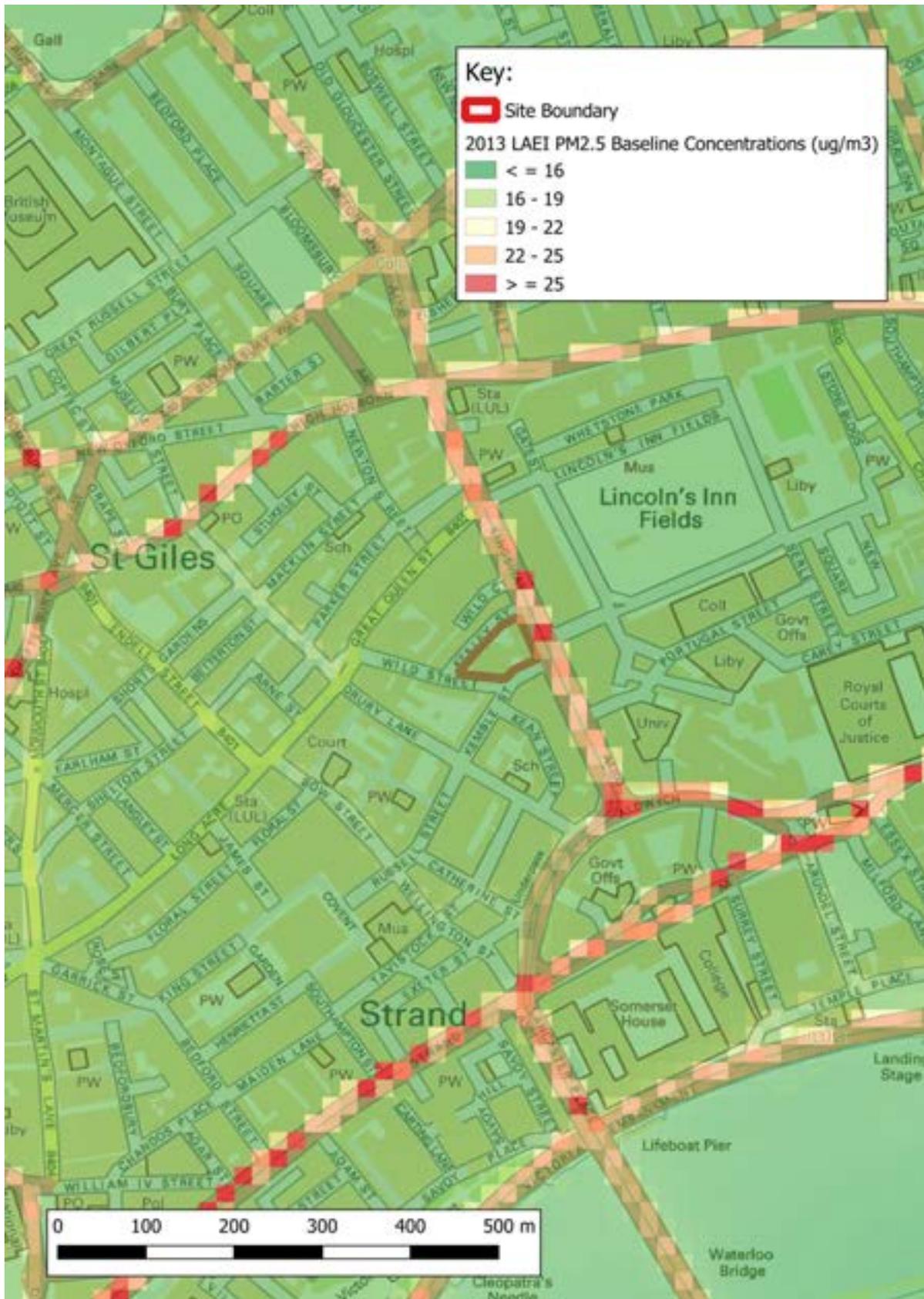


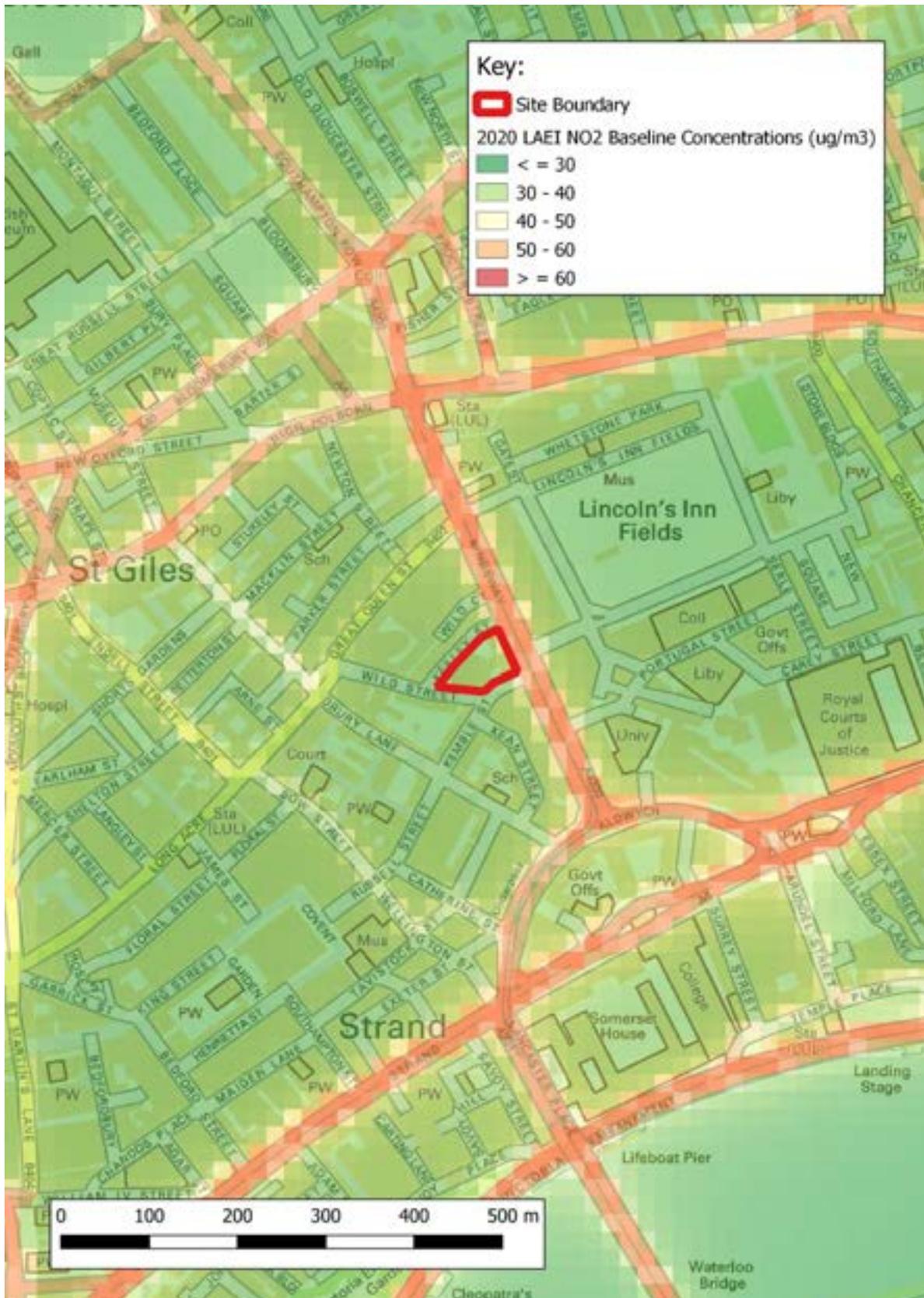
Figure 8 – 2016 LAEI Baseline PM<sub>10</sub> Concentrations (µg/m<sup>3</sup>)



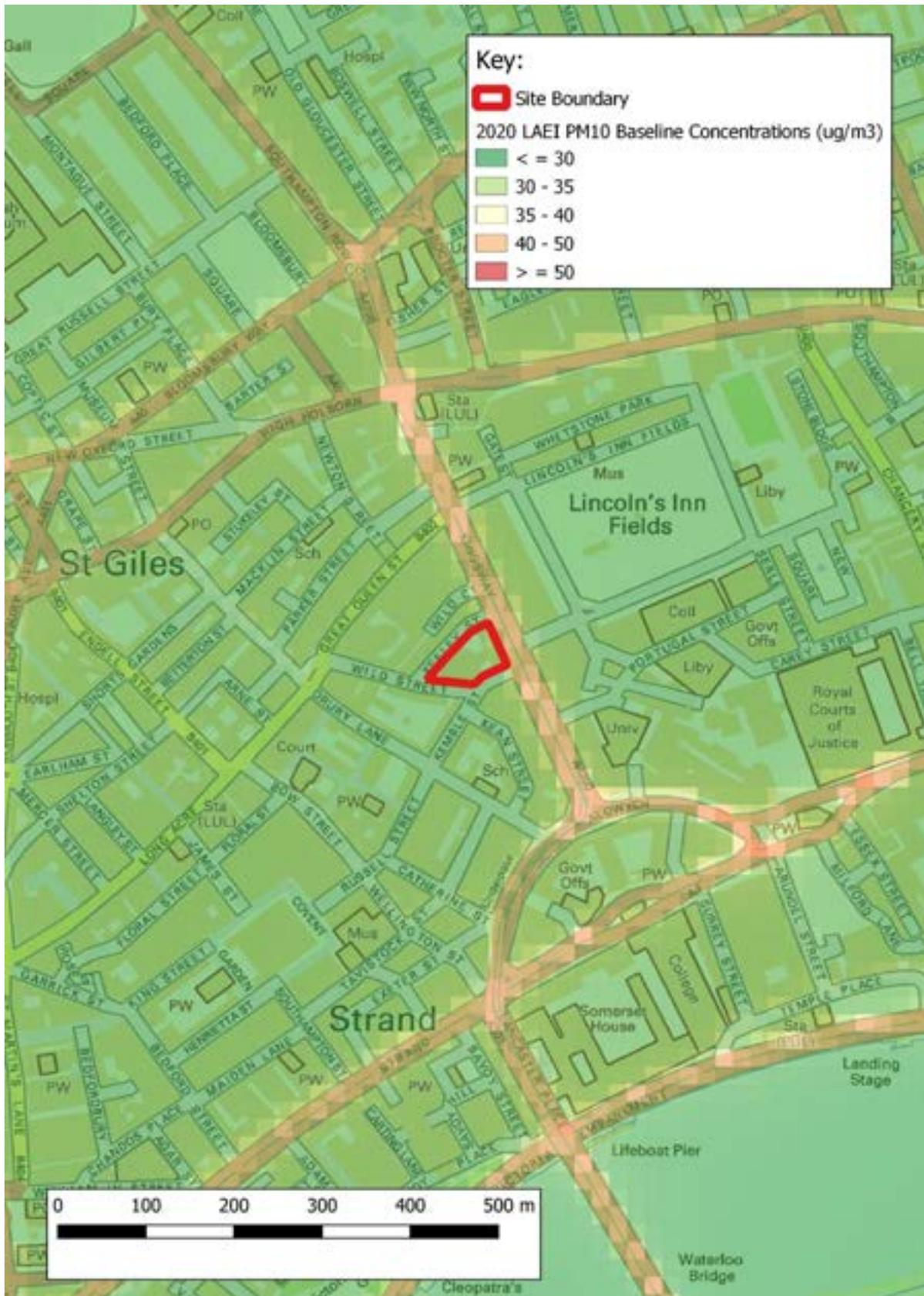
**Figure 9 – 2016 LAEI Baseline PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>)**



**Figure 10 – 2020 LAEI Baseline NO<sub>2</sub> Concentrations (µg/m<sup>3</sup>)**



**Figure 11 – 2020 LAEI Baseline PM<sub>10</sub> Concentrations (µg/m<sup>3</sup>)**



**Figure 12 – 2020 LAEI Baseline PM<sub>2.5</sub> Concentrations (µg/m<sup>3</sup>)**

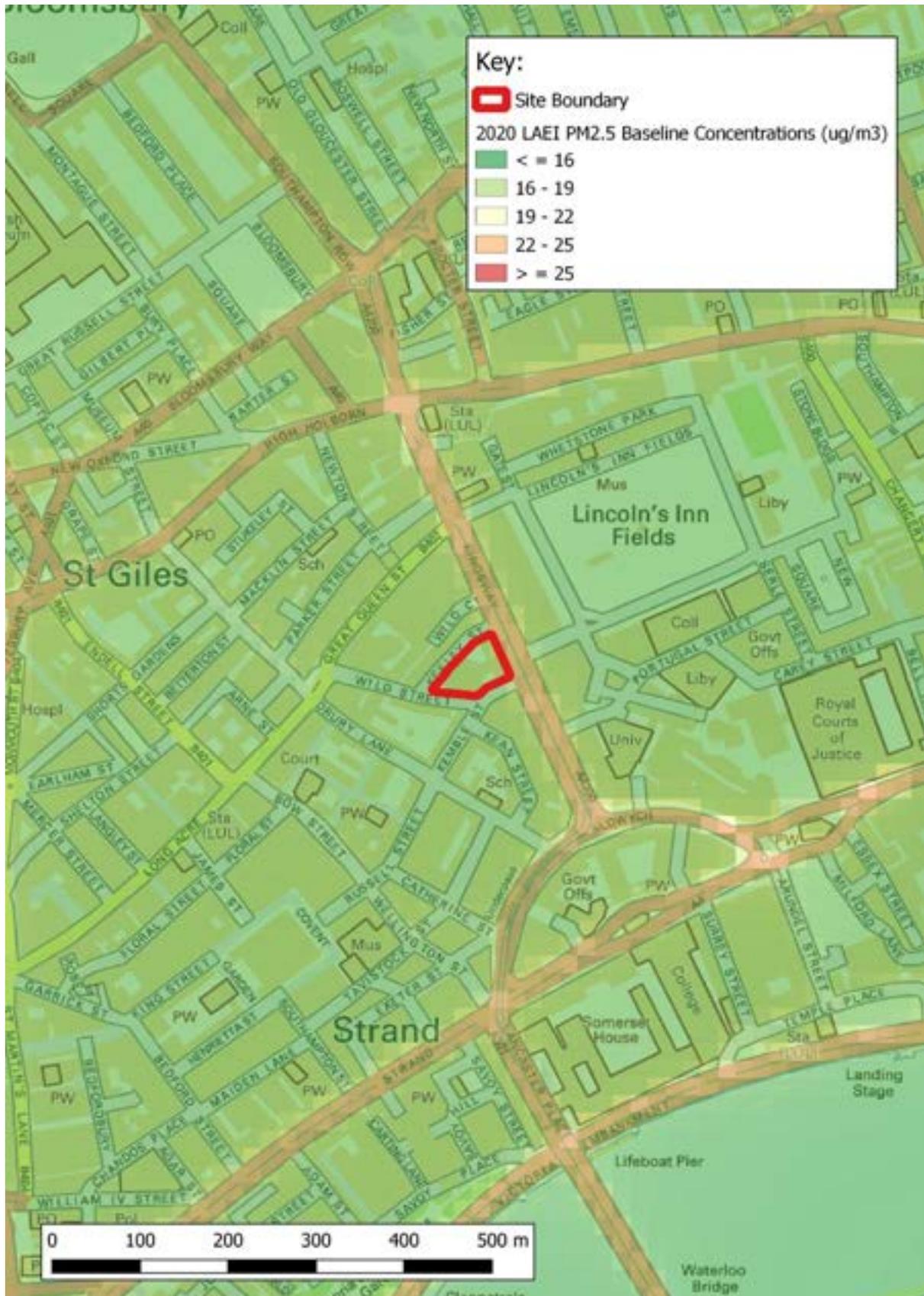
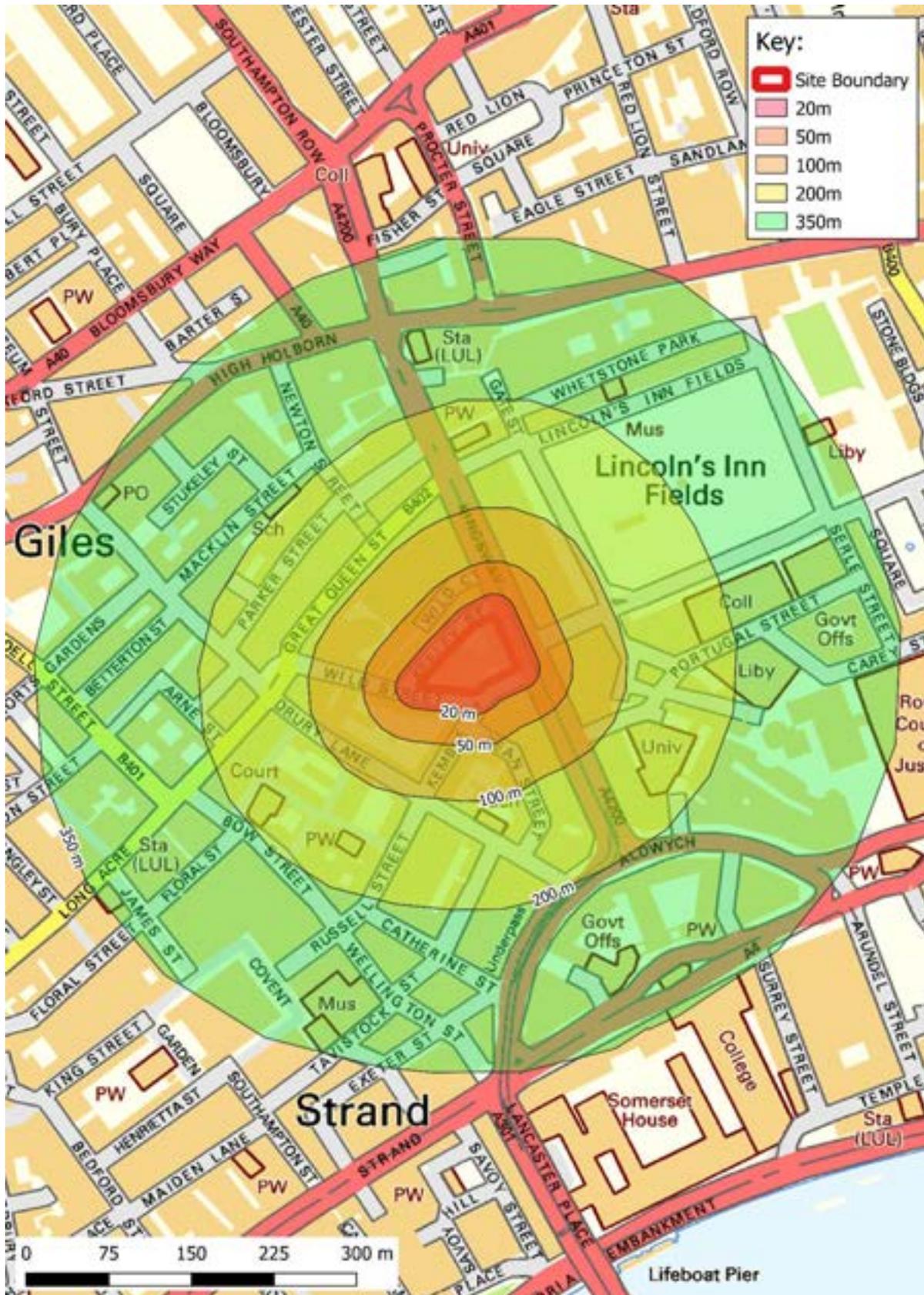


Figure 13 – Construction Zone of Influence



## Appendix A - Glossary of Terms

Term	Definition
AADT Annual Average Daily Traffic	A daily total traffic flow (24 hrs.), expressed as a mean daily flow across all 365 days of the year.
Adjustment	Application of a correction factor to modelled results to account for uncertainties in the model.
Air Quality Objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specific timescale (see also air quality standard).
Air Quality Standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
Ambient air	Outdoor air in the troposphere, excluding workplace air.
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year.
AQMA	Air Quality Management Area.
Conservative	Tending to over-predict the impact rather than under-predict.
Data Capture	The percentage of all the possible measurements for a given period that were validly measured.
Defra	Department for Environment, Food and Rural Affairs.
DfT	Department for Transport
Exceedance	A period of time where the concentrations of a pollutant is greater than the appropriate air quality standard.
HDV/HGV	Heavy Duty Vehicle/Heavy Goods Vehicle
LAQM	Local Air Quality Management
Model adjustment	Following model verification, the process by which modelled results are amended. This corrects for systematic error.
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
µg/m <sup>3</sup> (micrograms per cubic metre)	A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m <sup>3</sup> means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

## Appendix B - Modelled Receptors & Defra Background Concentrations

Receptor ID	Type	X, Y	Z (m)	2018 NO <sub>2</sub>	2018 PM <sub>10</sub>	2018 PM <sub>2.5</sub>	2022 NO <sub>2</sub>	2022 PM <sub>10</sub>	2022 PM <sub>2.5</sub>
E1	Short-term	530654, 181247	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E2	Short-term	530586, 181388	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E3	Long-term	530595, 181071	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E4	Long-term	530583, 181168	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E5	Long-term	530544, 181107	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E6	Short-term	530518, 181100	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E7	Short-term	530600, 180832	1.5	44.6	18.9	12.8	36.4	17.9	12.0
E8	Short-term	530694, 181036	1.5	45.8	19.6	13.1	37.7	18.5	12.3
E9	Long-term	530680, 180888	17.5	44.6	18.9	12.8	36.4	17.9	12.0
E10	Short-term	530695, 181077	1.5	45.8	19.6	13.1	37.7	18.5	12.3
P1-1	Short-term	530609, 181266	1.5	45.8	19.6	13.1	37.7	18.5	12.3
P1-2	Short-term	530609, 181266	7.5	45.8	19.6	13.1	37.7	18.5	12.3
P1-3	Short-term	530609, 181266	10.6	45.8	19.6	13.1	37.7	18.5	12.3
P1-4	Short-term	530609, 181266	13.6	45.8	19.6	13.1	37.7	18.5	12.3
P1-5	Short-term	530609, 181266	16.7	45.8	19.6	13.1	37.7	18.5	12.3
P1-6	Short-term	530609, 181266	19.7	45.8	19.6	13.1	37.7	18.5	12.3
P1-7	Short-term	530609, 181266	22.8	45.8	19.6	13.1	37.7	18.5	12.3
P1-8	Short-term	530609, 181266	25.8	45.8	19.6	13.1	37.7	18.5	12.3
P1-9	Short-term	530609, 181266	28.9	45.8	19.6	13.1	37.7	18.5	12.3
P2-1	Short-term	530632, 181216	1.5	45.8	19.6	13.1	37.7	18.5	12.3
P2-2	Short-term	530632, 181216	7.5	45.8	19.6	13.1	37.7	18.5	12.3
P2-3	Short-term	530632, 181216	10.6	45.8	19.6	13.1	37.7	18.5	12.3
P2-4	Short-term	530632, 181216	13.6	45.8	19.6	13.1	37.7	18.5	12.3
P2-5	Short-term	530632, 181216	16.7	45.8	19.6	13.1	37.7	18.5	12.3
P2-6	Short-term	530632, 181216	19.7	45.8	19.6	13.1	37.7	18.5	12.3
P2-7	Short-term	530632, 181216	22.8	45.8	19.6	13.1	37.7	18.5	12.3
P2-8	Short-term	530632, 181216	25.8	45.8	19.6	13.1	37.7	18.5	12.3
P2-9	Short-term	530632, 181216	28.9	45.8	19.6	13.1	37.7	18.5	12.3
P3-1	Short-term	530595, 181199	1.5	45.8	19.6	13.1	37.7	18.5	12.3
P3-2	Short-term	530595, 181199	7.5	45.8	19.6	13.1	37.7	18.5	12.3

Receptor ID	Type	X, Y	Z (m)	2018 NO <sub>2</sub>	2018 PM <sub>10</sub>	2018 PM <sub>2.5</sub>	2022 NO <sub>2</sub>	2022 PM <sub>10</sub>	2022 PM <sub>2.5</sub>
P3-3	Short-term	530595, 181199	10.6	45.8	19.6	13.1	37.7	18.5	12.3
P3-4	Short-term	530595, 181199	13.6	45.8	19.6	13.1	37.7	18.5	12.3
P3-5	Short-term	530595, 181199	16.7	45.8	19.6	13.1	37.7	18.5	12.3
P3-6	Short-term	530595, 181199	19.7	45.8	19.6	13.1	37.7	18.5	12.3
P3-7	Short-term	530595, 181199	22.8	45.8	19.6	13.1	37.7	18.5	12.3
P3-8	Short-term	530595, 181199	25.8	45.8	19.6	13.1	37.7	18.5	12.3
P3-9	Short-term	530595, 181199	28.9	45.8	19.6	13.1	37.7	18.5	12.3
P3-10	Short-term	530595, 181199	31.9	45.8	19.6	13.1	37.7	18.5	12.3
P3-11	Short-term	530595, 181199	34.9	45.8	19.6	13.1	37.7	18.5	12.3
P3-12	Short-term	530595, 181199	38.0	45.8	19.6	13.1	37.7	18.5	12.3
P3-13	Short-term	530595, 181199	41.0	45.8	19.6	13.1	37.7	18.5	12.3
P3-14	Short-term	530595, 181199	44.1	45.8	19.6	13.1	37.7	18.5	12.3
P3-15	Short-term	530595, 181199	47.1	45.8	19.6	13.1	37.7	18.5	12.3
P3-16	Short-term	530595, 181199	50.2	45.8	19.6	13.1	37.7	18.5	12.3
P3-17	Short-term	530595, 181199	53.2	45.8	19.6	13.1	37.7	18.5	12.3
P3-18	Short-term	530595, 181199	56.3	45.8	19.6	13.1	37.7	18.5	12.3
P4-1	Short-term	530562, 181209	1.5	45.8	19.6	13.1	37.7	18.5	12.3
P4-2	Short-term	530562, 181209	7.5	45.8	19.6	13.1	37.7	18.5	12.3
P4-3	Short-term	530562, 181209	10.6	45.8	19.6	13.1	37.7	18.5	12.3
P4-4	Short-term	530562, 181209	13.6	45.8	19.6	13.1	37.7	18.5	12.3
P4-5	Short-term	530562, 181209	16.7	45.8	19.6	13.1	37.7	18.5	12.3
P4-6	Short-term	530562, 181209	19.7	45.8	19.6	13.1	37.7	18.5	12.3
P4-7	Short-term	530562, 181209	22.8	45.8	19.6	13.1	37.7	18.5	12.3
P4-8	Short-term	530562, 181209	25.8	45.8	19.6	13.1	37.7	18.5	12.3
P4-9	Short-term	530562, 181209	28.9	45.8	19.6	13.1	37.7	18.5	12.3
P4-10	Short-term	530562, 181209	31.9	45.8	19.6	13.1	37.7	18.5	12.3
P4-11	Short-term	530562, 181209	34.9	45.8	19.6	13.1	37.7	18.5	12.3
P4-12	Short-term	530562, 181209	38.0	45.8	19.6	13.1	37.7	18.5	12.3
P4-13	Short-term	530562, 181209	41.0	45.8	19.6	13.1	37.7	18.5	12.3
P4-14	Short-term	530562, 181209	44.1	45.8	19.6	13.1	37.7	18.5	12.3
P4-15	Short-term	530562, 181209	47.1	45.8	19.6	13.1	37.7	18.5	12.3

Receptor ID	Type	X, Y	Z (m)	2018 NO <sub>2</sub>	2018 PM <sub>10</sub>	2018 PM <sub>2.5</sub>	2022 NO <sub>2</sub>	2022 PM <sub>10</sub>	2022 PM <sub>2.5</sub>
P4-16	Short-term	530562, 181209	50.2	45.8	19.6	13.1	37.7	18.5	12.3
P4-17	Short-term	530562, 181209	53.2	45.8	19.6	13.1	37.7	18.5	12.3
P4-18	Short-term	530562, 181209	56.3	45.8	19.6	13.1	37.7	18.5	12.3
P5-10	Short-term	530601, 181225	31.9	45.8	19.6	13.1	37.7	18.5	12.3
P5-11	Short-term	530601, 181225	34.9	45.8	19.6	13.1	37.7	18.5	12.3
P5-12	Short-term	530601, 181225	38.0	45.8	19.6	13.1	37.7	18.5	12.3
P5-13	Short-term	530601, 181225	41.0	45.8	19.6	13.1	37.7	18.5	12.3
P5-14	Short-term	530601, 181225	44.1	45.8	19.6	13.1	37.7	18.5	12.3
P5-15	Short-term	530601, 181225	47.1	45.8	19.6	13.1	37.7	18.5	12.3
P5-16	Short-term	530601, 181225	50.2	45.8	19.6	13.1	37.7	18.5	12.3
P5-17	Short-term	530601, 181225	53.2	45.8	19.6	13.1	37.7	18.5	12.3
P5-18	Short-term	530601, 181225	56.3	45.8	19.6	13.1	37.7	18.5	12.3

## Appendix C – Model Verification

The comparison of modelled concentrations with local monitored concentrations is a process termed ‘verification’. Model verification investigates the discrepancies between modelled and measured concentrations. Discrepancies occur due to model uncertainties, such as:

- Estimates of background pollutant concentrations;
- Meteorological data uncertainties;
- Traffic data uncertainties;
- Model input parameters; and,
- Overall limitations of the dispersion model.

NO<sub>2</sub> is produced in the atmosphere by the reaction of nitric oxide (NO) with ozone. Therefore, model verification for nitrogen oxides (NO<sub>x</sub> = NO + NO<sub>2</sub>) the primary pollutant is appropriate. This has been undertaken in accordance with Chapter 7 of LAQM.TG(16).

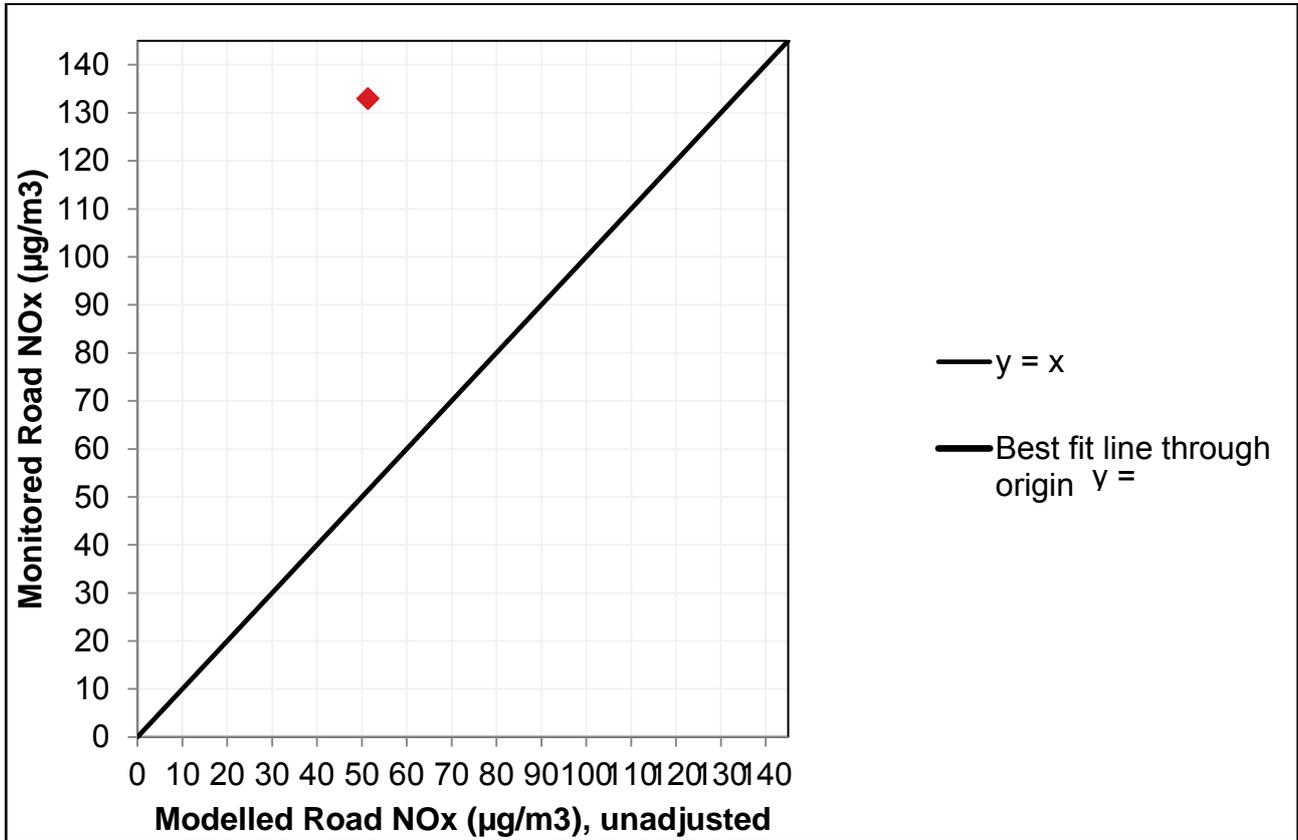
The model has been run to predict the 2018 annual mean road-NO<sub>x</sub> contribution at the monitoring location give below. The model outputs of road-NO<sub>x</sub> for the location has been compared with the 2018 ‘measured’ road-NO<sub>x</sub>, which was determined utilising the NO<sub>x</sub> from the NO<sub>2</sub> calculator and the NO<sub>2</sub> concentration data from the City of Westminster monitoring.

Details of the data used in the verification process is in the table and figure below.

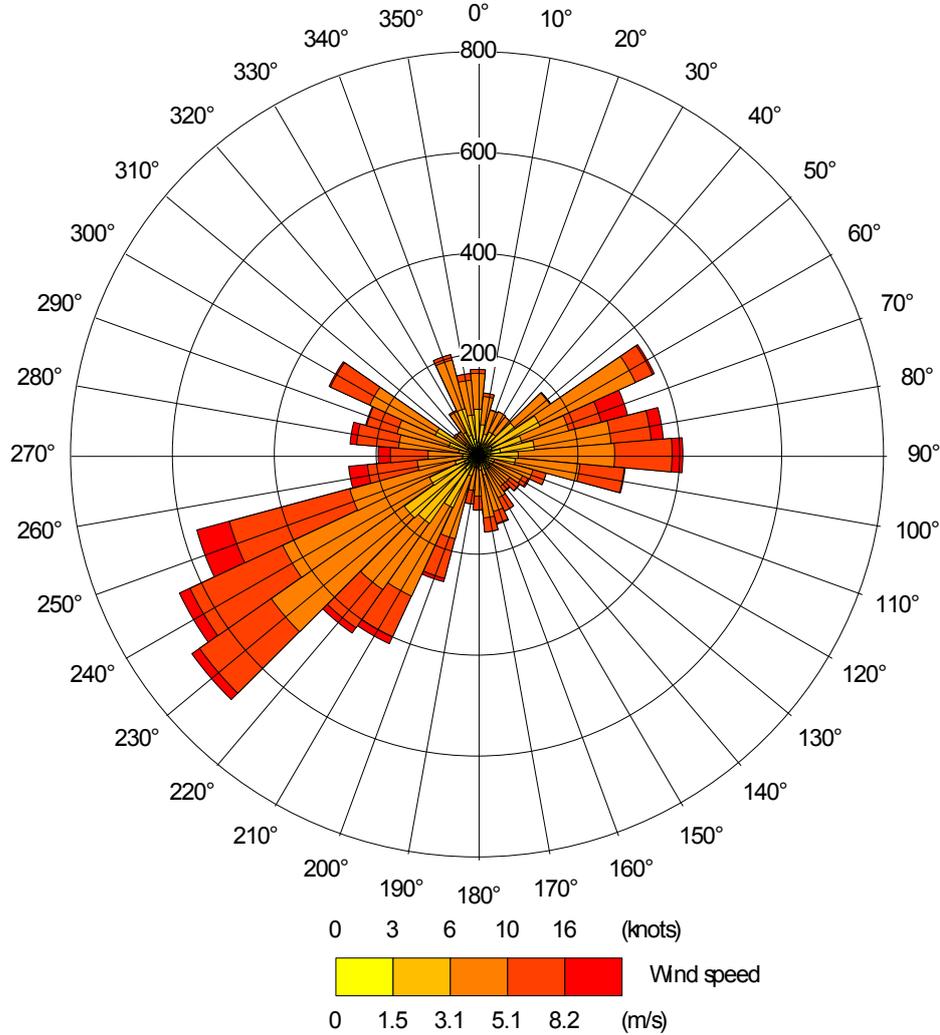
Location	2018 Monitored Total NO <sub>2</sub> (µg/m <sup>3</sup> )	Background NO <sub>2</sub> (µg/m <sup>3</sup> )	2018 Monitored Road Contribution NO <sub>x</sub> (µg/m <sup>3</sup> )	2018 Modelled Road Contribution NO <sub>x</sub> (µg/m <sup>3</sup> )	Ratio of monitored/monitored NO <sub>x</sub> road contribution
Strand AURN	88	45.84	133.01	51.28	2.59

The adjustment factor calculated is 2.59.

For PM<sub>10</sub> and PM<sub>2.5</sub> there are no relevant local monitoring data against which the model could be verified. Consequently, the verification factors determined above for adjusting the road-NO<sub>x</sub> contribution has been applied to the predicted road-PM<sub>10</sub> and road-PM<sub>2.5</sub> contributions, consistent with guidance set out in LAQM.TG(16).



## Appendix D - 2018 Wind Rose from London City Airport



## Appendix E – Modelled Buildings

Building	Grid Reference	Height (m)	Length (m)	Width (m)	Angle (°)
1 (circular)	530585, 181209	59.657	38	38	0
2	530614, 181230	30.395	48.5	15.1	335

## Appendix F - Operational Results (2018 Baseline and Emission Factors)

### Annual Mean NO<sub>2</sub> Results

Receptor ID	2018 Baseline (µg/m <sup>3</sup> )	Without Development (µg/m <sup>3</sup> )	With Development (µg/m <sup>3</sup> )	Change (µg/m <sup>3</sup> )	Impact
E1	54.4	54.9	55.2	0.3	Moderate Adverse
E2	55.4	56.0	56.1	0.1	Negligible
E3	51.8	52.2	52.2	0.0	Negligible
E4	49.7	50.0	50.0	0.0	Negligible
E5	50.6	51.0	51.0	0.0	Negligible
E6	49.9	50.2	50.2	0.0	Negligible
E7	64.2	65.3	65.3	0.0	Negligible
E8	63.9	64.9	65.0	0.1	Negligible
E9	47.1	47.2	47.3	0.1	Negligible
E10	58.1	58.9	58.9	0.0	Negligible
P1-1	-	-	56.1	-	APEC C
P1-2	-	-	49.2	-	APEC C
P1-3	-	-	47.9	-	APEC C
P1-4	-	-	47.2	-	APEC C
P1-5	-	-	46.9	-	APEC C
P1-6	-	-	46.7	-	APEC C
P1-7	-	-	46.5	-	APEC C
P1-8	-	-	46.4	-	APEC C
P1-9	-	-	46.3	-	APEC C
P2-1	-	-	56.4	-	APEC C
P2-2	-	-	49.9	-	APEC C
P2-3	-	-	48.5	-	APEC C
P2-4	-	-	47.8	-	APEC C
P2-5	-	-	47.4	-	APEC C
P2-6	-	-	47.2	-	APEC C
P2-7	-	-	47.0	-	APEC C
P2-8	-	-	46.9	-	APEC C
P2-9	-	-	46.8	-	APEC C

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P3-1	-	-	50.0	-	APEC C
P3-2	-	-	48.8	-	APEC C
P3-3	-	-	48.1	-	APEC C
P3-4	-	-	47.5	-	APEC C
P3-5	-	-	47.1	-	APEC C
P3-6	-	-	46.8	-	APEC C
P3-7	-	-	46.6	-	APEC C
P3-8	-	-	46.4	-	APEC C
P3-9	-	-	46.3	-	APEC C
P3-10	-	-	46.2	-	APEC C
P3-11	-	-	46.1	-	APEC C
P3-12	-	-	46.1	-	APEC C
P3-13	-	-	46.0	-	APEC C
P3-14	-	-	46.0	-	APEC C
P3-15	-	-	46.0	-	APEC C
P3-16	-	-	46.0	-	APEC C
P3-17	-	-	45.9	-	APEC C
P3-18	-	-	45.9	-	APEC C
P4-1	-	-	49.3	-	APEC C
P4-2	-	-	48.5	-	APEC C
P4-3	-	-	48.0	-	APEC C
P4-4	-	-	47.7	-	APEC C
P4-5	-	-	47.3	-	APEC C
P4-6	-	-	47.1	-	APEC C
P4-7	-	-	46.8	-	APEC C
P4-8	-	-	46.7	-	APEC C
P4-9	-	-	46.6	-	APEC C
P4-10	-	-	46.5	-	APEC C
P4-11	-	-	46.4	-	APEC C
P4-12	-	-	46.4	-	APEC C
P4-13	-	-	46.3	-	APEC C

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-14	-	-	46.3	-	APEC C
P4-15	-	-	46.3	-	APEC C
P4-16	-	-	46.2	-	APEC C
P4-17	-	-	46.2	-	APEC C
P4-18	-	-	46.2	-	APEC C
P5-10	-	-	46.9	-	APEC C
P5-11	-	-	46.9	-	APEC C
P5-12	-	-	46.8	-	APEC C
P5-13	-	-	46.8	-	APEC C
P5-14	-	-	46.7	-	APEC C
P5-15	-	-	46.7	-	APEC C
P5-16	-	-	46.7	-	APEC C
P5-17	-	-	46.7	-	APEC C
P5-18	-	-	46.6	-	APEC C

### 1-hour Mean NO<sub>2</sub> Results

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. >20 $\mu\text{g}/\text{m}^3$ )	Exceed (i.e. >200 $\mu\text{g}/\text{m}^3$ )	Impact
E1	132.3	134.4	136.1	1.7	1.6	No	No	Negligible
E2	135.0	137.3	137.8	0.5	0.4	No	No	Negligible
E3	124.9	126.8	127.3	0.5	0.5	No	No	Negligible
E4	115.3	116.6	118.5	1.9	1.9	No	No	Negligible
E5	119.9	121.5	122.0	0.5	0.6	No	No	Negligible
E6	118.9	120.5	121.1	0.6	0.6	No	No	Negligible
E7	182.6	187.4	187.7	0.3	0.3	No	No	Negligible
E8	172.3	176.6	177.1	0.5	0.5	No	No	Negligible
E9	102.6	103.4	103.7	0.3	0.3	No	No	Negligible
E10	156.6	160.1	160.8	0.7	0.5	No	No	Negligible
P1-1	-	-	141.1	-	1.3	No	No	No

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. $>20\mu\text{g}/\text{m}^3$ )	Exceed (i.e. $>200\mu\text{g}/\text{m}^3$ )	Impact
P1-2	-	-	117.3	-	1.3	No	No	No
P1-3	-	-	111.9	-	1.3	No	No	No
P1-4	-	-	108.0	-	1.3	No	No	No
P1-5	-	-	104.8	-	1.3	No	No	No
P1-6	-	-	102.3	-	1.3	No	No	No
P1-7	-	-	100.3	-	1.3	No	No	No
P1-8	-	-	98.6	-	1.3	No	No	No
P1-9	-	-	97.4	-	1.3	No	No	No
P2-1	-	-	142.9	-	1.9	No	No	No
P2-2	-	-	119.6	-	1.9	No	No	No
P2-3	-	-	113.7	-	1.9	No	No	No
P2-4	-	-	109.0	-	1.9	No	No	No
P2-5	-	-	105.5	-	1.9	No	No	No
P2-6	-	-	102.8	-	1.9	No	No	No
P2-7	-	-	100.5	-	1.9	No	No	No
P2-8	-	-	99.3	-	1.9	No	No	No
P2-9	-	-	98.7	-	1.9	No	No	No
P3-1	-	-	117.5	-	0.0	No	No	No
P3-2	-	-	111.6	-	0.0	No	No	No
P3-3	-	-	107.9	-	0.0	No	No	No
P3-4	-	-	105.2	-	0.0	No	No	No
P3-5	-	-	102.9	-	0.0	No	No	No
P3-6	-	-	100.6	-	0.0	No	No	No
P3-7	-	-	98.7	-	0.0	No	No	No
P3-8	-	-	97.6	-	0.0	No	No	No
P3-9	-	-	96.6	-	0.0	No	No	No
P3-10	-	-	95.7	-	0.0	No	No	No
P3-11	-	-	95.2	-	0.0	No	No	No
P3-12	-	-	94.9	-	0.0	No	No	No
P3-13	-	-	94.6	-	0.0	No	No	No

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. $>20\mu\text{g}/\text{m}^3$ )	Exceed (i.e. $>200\mu\text{g}/\text{m}^3$ )	Impact
P3-14	-	-	94.2	-	0.0	No	No	No
P3-15	-	-	94.0	-	0.0	No	No	No
P3-16	-	-	93.7	-	0.0	No	No	No
P3-17	-	-	93.4	-	0.0	No	No	No
P3-18	-	-	93.2	-	0.0	No	No	No
P4-1	-	-	114.8	-	2.1	No	No	No
P4-2	-	-	111.5	-	2.1	No	No	No
P4-3	-	-	108.8	-	2.1	No	No	No
P4-4	-	-	106.3	-	2.1	No	No	No
P4-5	-	-	104.2	-	2.1	No	No	No
P4-6	-	-	102.5	-	2.1	No	No	No
P4-7	-	-	100.6	-	2.1	No	No	No
P4-8	-	-	99.6	-	2.1	No	No	No
P4-9	-	-	98.5	-	2.1	No	No	No
P4-10	-	-	97.6	-	2.1	No	No	No
P4-11	-	-	96.9	-	2.1	No	No	No
P4-12	-	-	96.7	-	2.1	No	No	No
P4-13	-	-	96.5	-	2.1	No	No	No
P4-14	-	-	96.2	-	2.1	No	No	No
P4-15	-	-	95.9	-	2.1	No	No	No
P4-16	-	-	95.7	-	2.1	No	No	No
P4-17	-	-	95.5	-	2.1	No	No	No
P4-18	-	-	95.4	-	2.1	No	No	No
P5-10	-	-	97.9	-	2.1	No	No	No
P5-11	-	-	97.3	-	2.1	No	No	No
P5-12	-	-	97.0	-	2.1	No	No	No
P5-13	-	-	96.5	-	2.1	No	No	No
P5-14	-	-	96.2	-	2.1	No	No	No
P5-15	-	-	96.0	-	2.1	No	No	No
P5-16	-	-	95.8	-	2.1	No	No	No

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. >20 $\mu\text{g}/\text{m}^3$ )	Exceed (i.e. >200 $\mu\text{g}/\text{m}^3$ )	Impact
P5-17	-	0.0	95.5	-	2.1	No	No	No
P5-18	-	0.0	95.3	-	2.1	No	No	No

### Annual Mean PM<sub>10</sub> Results

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
E1	21.3	21.4	21.4	0.00	Negligible
E2	21.5	21.6	21.6	0.00	Negligible
E3	20.6	20.7	20.7	0.00	Negligible
E4	20.3	20.3	20.3	0.00	Negligible
E5	20.4	20.5	20.5	0.00	Negligible
E6	20.3	20.4	20.4	0.00	Negligible
E7	22.2	22.4	22.4	0.00	Negligible
E8	22.6	22.8	22.8	0.00	Negligible
E9	19.3	19.4	19.4	0.00	Negligible
E10	21.8	21.9	21.9	0.00	Negligible
P1-1	-	-	21.6	-	APEC A
P1-2	-	-	20.2	-	APEC A
P1-3	-	-	19.9	-	APEC A
P1-4	-	-	19.8	-	APEC A
P1-5	-	-	19.7	-	APEC A
P1-6	-	-	19.7	-	APEC A
P1-7	-	-	19.7	-	APEC A
P1-8	-	-	19.6	-	APEC A
P1-9	-	-	19.6	-	APEC A
P2-1	-	-	21.6	-	APEC A
P2-2	-	-	20.2	-	APEC A
P2-3	-	-	19.9	-	APEC A
P2-4	-	-	19.8	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P2-5	-	-	19.7	-	APEC A
P2-6	-	-	19.7	-	APEC A
P2-7	-	-	19.7	-	APEC A
P2-8	-	-	19.6	-	APEC A
P2-9	-	-	19.6	-	APEC A
P3-1	-	-	20.3	-	APEC A
P3-2	-	-	20.1	-	APEC A
P3-3	-	-	20.0	-	APEC A
P3-4	-	-	19.9	-	APEC A
P3-5	-	-	19.8	-	APEC A
P3-6	-	-	19.7	-	APEC A
P3-7	-	-	19.7	-	APEC A
P3-8	-	-	19.7	-	APEC A
P3-9	-	-	19.6	-	APEC A
P3-10	-	-	19.6	-	APEC A
P3-11	-	-	19.6	-	APEC A
P3-12	-	-	19.6	-	APEC A
P3-13	-	-	19.6	-	APEC A
P3-14	-	-	19.6	-	APEC A
P3-15	-	-	19.6	-	APEC A
P3-16	-	-	19.6	-	APEC A
P3-17	-	-	19.6	-	APEC A
P3-18	-	-	19.6	-	APEC A
P4-1	-	-	20.1	-	APEC A
P4-2	-	-	20.0	-	APEC A
P4-3	-	-	19.9	-	APEC A
P4-4	-	-	19.8	-	APEC A
P4-5	-	-	19.8	-	APEC A
P4-6	-	-	19.7	-	APEC A
P4-7	-	-	19.7	-	APEC A
P4-8	-	-	19.6	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-9	-	-	19.6	-	APEC A
P4-10	-	-	19.6	-	APEC A
P4-11	-	-	19.6	-	APEC A
P4-12	-	-	19.6	-	APEC A
P4-13	-	-	19.6	-	APEC A
P4-14	-	-	19.6	-	APEC A
P4-15	-	-	19.6	-	APEC A
P4-16	-	-	19.6	-	APEC A
P4-17	-	-	19.6	-	APEC A
P4-18	-	-	19.6	-	APEC A
P5-10	-	-	19.6	-	APEC A
P5-11	-	-	19.6	-	APEC A
P5-12	-	-	19.6	-	APEC A
P5-13	-	-	19.6	-	APEC A
P5-14	-	-	19.6	-	APEC A
P5-15	-	-	19.6	-	APEC A
P5-16	-	-	19.6	-	APEC A
P5-17	-	-	19.6	-	APEC A
P5-18	-	-	19.6	-	APEC A

### Daily Mean PM<sub>10</sub> Results

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
E1	5	5	5	0	Negligible
E2	6	6	6	0	Negligible
E3	4	4	4	0	Negligible
E4	4	4	4	0	Negligible
E5	4	4	4	0	Negligible
E6	4	4	4	0	Negligible
E7	7	7	7	0	Negligible
E8	7	8	8	0	Negligible

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
E9	3	3	3	0	Negligible
E10	6	6	6	0	Negligible
P1-1	-	-	6	-	No
P1-2	-	-	4	-	No
P1-3	-	-	3	-	No
P1-4	-	-	3	-	No
P1-5	-	-	3	-	No
P1-6	-	-	3	-	No
P1-7	-	-	3	-	No
P1-8	-	-	3	-	No
P1-9	-	-	3	-	No
P2-1	-	-	6	-	No
P2-2	-	-	4	-	No
P2-3	-	-	3	-	No
P2-4	-	-	3	-	No
P2-5	-	-	3	-	No
P2-6	-	-	3	-	No
P2-7	-	-	3	-	No
P2-8	-	-	3	-	No
P2-9	-	-	3	-	No
P3-1	-	-	4	-	No
P3-2	-	-	4	-	No
P3-3	-	-	3	-	No
P3-4	-	-	3	-	No
P3-5	-	-	3	-	No
P3-6	-	-	3	-	No
P3-7	-	-	3	-	No
P3-8	-	-	3	-	No
P3-9	-	-	3	-	No
P3-10	-	-	3	-	No
P3-11	-	-	3	-	No

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
P3-12	-	-	3	-	No
P3-13	-	-	3	-	No
P3-14	-	-	3	-	No
P3-15	-	-	3	-	No
P3-16	-	-	3	-	No
P3-17	-	-	3	-	No
P3-18	-	-	3	-	No
P4-1	-	-	4	-	No
P4-2	-	-	3	-	No
P4-3	-	-	3	-	No
P4-4	-	-	3	-	No
P4-5	-	-	3	-	No
P4-6	-	-	3	-	No
P4-7	-	-	3	-	No
P4-8	-	-	3	-	No
P4-9	-	-	3	-	No
P4-10	-	-	3	-	No
P4-11	-	-	3	-	No
P4-12	-	-	3	-	No
P4-13	-	-	3	-	No
P4-14	-	-	3	-	No
P4-15	-	-	3	-	No
P4-16	-	-	3	-	No
P4-17	-	-	3	-	No
P4-18	-	-	3	-	No
P5-10	-	-	3	-	No
P5-11	-	-	3	-	No
P5-12	-	-	3	-	No
P5-13	-	-	3	-	No
P5-14	-	-	3	-	No
P5-15	-	-	3	-	No

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
P5-16	-	-	3	-	No
P5-17	-	-	3	-	No
P5-18	-	-	3	-	No

### Annual Mean PM<sub>2.5</sub> Results

Receptor ID	2018 Baseline (µg/m <sup>3</sup> )	Without Development (µg/m <sup>3</sup> )	With Development (µg/m <sup>3</sup> )	Change (µg/m <sup>3</sup> )	Impact
E1	14.2	14.3	14.3	0.0	Negligible
E2	14.3	14.4	14.4	0.0	Negligible
E3	13.8	13.9	13.9	0.0	Negligible
E4	13.6	13.6	13.6	0.0	Negligible
E5	13.7	13.7	13.7	0.0	Negligible
E6	13.6	13.6	13.6	0.0	Negligible
E7	14.9	15.0	15.0	0.0	Negligible
E8	15.1	15.2	15.2	0.0	Negligible
E9	13.0	13.1	13.1	0.0	Negligible
E10	14.5	14.6	14.6	0.0	Negligible
P1-1	-	-	14.4	-	APEC A
P1-2	-	-	13.5	-	APEC A
P1-3	-	-	13.3	-	APEC A
P1-4	-	-	13.3	-	APEC A
P1-5	-	-	13.2	-	APEC A
P1-6	-	-	13.2	-	APEC A
P1-7	-	-	13.2	-	APEC A
P1-8	-	-	13.2	-	APEC A
P1-9	-	-	13.2	-	APEC A
P2-1	-	-	14.4	-	APEC A
P2-2	-	-	13.5	-	APEC A
P2-3	-	-	13.4	-	APEC A
P2-4	-	-	13.3	-	APEC A
P2-5	-	-	13.2	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P2-6	-	-	13.2	-	APEC A
P2-7	-	-	13.2	-	APEC A
P2-8	-	-	13.2	-	APEC A
P2-9	-	-	13.2	-	APEC A
P3-1	-	-	13.6	-	APEC A
P3-2	-	-	13.5	-	APEC A
P3-3	-	-	13.4	-	APEC A
P3-4	-	-	13.3	-	APEC A
P3-5	-	-	13.3	-	APEC A
P3-6	-	-	13.2	-	APEC A
P3-7	-	-	13.2	-	APEC A
P3-8	-	-	13.2	-	APEC A
P3-9	-	-	13.2	-	APEC A
P3-10	-	-	13.2	-	APEC A
P3-11	-	-	13.2	-	APEC A
P3-12	-	-	13.1	-	APEC A
P3-13	-	-	13.1	-	APEC A
P3-14	-	-	13.1	-	APEC A
P3-15	-	-	13.1	-	APEC A
P3-16	-	-	13.1	-	APEC A
P3-17	-	-	13.1	-	APEC A
P3-18	-	-	13.1	-	APEC A
P4-1	-	-	13.5	-	APEC A
P4-2	-	-	13.4	-	APEC A
P4-3	-	-	13.3	-	APEC A
P4-4	-	-	13.3	-	APEC A
P4-5	-	-	13.3	-	APEC A
P4-6	-	-	13.2	-	APEC A
P4-7	-	-	13.2	-	APEC A
P4-8	-	-	13.2	-	APEC A
P4-9	-	-	13.2	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-10	-	-	13.2	-	APEC A
P4-11	-	-	13.2	-	APEC A
P4-12	-	-	13.1	-	APEC A
P4-13	-	-	13.1	-	APEC A
P4-14	-	-	13.1	-	APEC A
P4-15	-	-	13.1	-	APEC A
P4-16	-	-	13.1	-	APEC A
P4-17	-	-	13.1	-	APEC A
P4-18	-	-	13.1	-	APEC A
P5-10	-	-	13.2	-	APEC A
P5-11	-	-	13.2	-	APEC A
P5-12	-	-	13.1	-	APEC A
P5-13	-	-	13.1	-	APEC A
P5-14	-	-	13.1	-	APEC A
P5-15	-	-	13.1	-	APEC A
P5-16	-	-	13.1	-	APEC A
P5-17	-	-	13.1	-	APEC A
P5-18	-	-	13.1	-	APEC A

## Appendix G - Operational Results (Sensitivity Analysis – 2022 Background and Emission Factors)

### Annual Mean NO<sub>2</sub> Results

Receptor ID	2018 Baseline (µg/m <sup>3</sup> )	Without Development (µg/m <sup>3</sup> )	With Development (µg/m <sup>3</sup> )	Change (µg/m <sup>3</sup> )	Impact
E1	54.4	43.2	43.5	0.3	Moderate Adverse
E2	55.4	43.9	44.0	0.1	Negligible
E3	51.8	41.6	41.6	0.0	Negligible
E4	49.7	40.2	40.3	0.1	Negligible
E5	50.6	40.9	40.9	0.0	Negligible
E6	49.9	40.4	40.4	0.0	Negligible
E7	64.2	48.0	48.1	0.1	Negligible
E8	63.9	48.5	48.6	0.1	Negligible
E9	47.1	37.8	37.9	0.1	Negligible
E10	58.1	45.4	45.4	0.0	Negligible
P1-1	-	-	44.0	-	APEC C
P1-2	-	-	39.8	-	APEC B
P1-3	-	-	39.0	-	APEC B
P1-4	-	-	38.6	-	APEC B
P1-5	-	-	38.4	-	APEC B
P1-6	-	-	38.3	-	APEC B
P1-7	-	-	38.2	-	APEC B
P1-8	-	-	38.1	-	APEC B
P1-9	-	-	38.0	-	APEC A
P2-1	-	-	44.3	-	APEC C
P2-2	-	-	40.3	-	APEC B
P2-3	-	-	39.5	-	APEC B
P2-4	-	-	39.1	-	APEC B
P2-5	-	-	38.8	-	APEC B
P2-6	-	-	38.7	-	APEC B
P2-7	-	-	38.6	-	APEC B
P2-8	-	-	38.5	-	APEC B

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P2-9	-	-	38.5	-	APEC B
P3-1	-	-	40.2	-	APEC B
P3-2	-	-	39.5	-	APEC B
P3-3	-	-	39.1	-	APEC B
P3-4	-	-	38.7	-	APEC B
P3-5	-	-	38.5	-	APEC B
P3-6	-	-	38.3	-	APEC B
P3-7	-	-	38.2	-	APEC B
P3-8	-	-	38.1	-	APEC B
P3-9	-	-	38.0	-	APEC A
P3-10	-	-	37.9	-	APEC A
P3-11	-	-	37.9	-	APEC A
P3-12	-	-	37.9	-	APEC A
P3-13	-	-	37.8	-	APEC A
P3-14	-	-	37.8	-	APEC A
P3-15	-	-	37.8	-	APEC A
P3-16	-	-	37.8	-	APEC A
P3-17	-	-	37.8	-	APEC A
P3-18	-	-	37.8	-	APEC A
P4-1	-	-	39.9	-	APEC B
P4-2	-	-	39.4	-	APEC B
P4-3	-	-	39.1	-	APEC B
P4-4	-	-	38.9	-	APEC B
P4-5	-	-	38.7	-	APEC B
P4-6	-	-	38.5	-	APEC B
P4-7	-	-	38.4	-	APEC B
P4-8	-	-	38.3	-	APEC B
P4-9	-	-	38.3	-	APEC B
P4-10	-	-	38.2	-	APEC B
P4-11	-	-	38.2	-	APEC B
P4-12	-	-	38.1	-	APEC B

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-13	-	-	38.1	-	APEC B
P4-14	-	-	38.1	-	APEC B
P4-15	-	-	38.1	-	APEC B
P4-16	-	-	38.1	-	APEC B
P4-17	-	-	38.1	-	APEC B
P4-18	-	-	38.1	-	APEC B
P5-10	-	-	38.7	-	APEC B
P5-11	-	-	38.6	-	APEC B
P5-12	-	-	38.6	-	APEC B
P5-13	-	-	38.6	-	APEC B
P5-14	-	-	38.5	-	APEC B
P5-15	-	-	38.5	-	APEC B
P5-16	-	-	38.5	-	APEC B
P5-17	-	-	38.5	-	APEC B
P5-18	-	-	38.5	-	APEC B

### 1-hour Mean NO<sub>2</sub> Results

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. >20 $\mu\text{g}/\text{m}^3$ )	Exceed (i.e. >200 $\mu\text{g}/\text{m}^3$ )	Impact
E1	132.3	102.8	104.5	1.7	1.6	No	No	Negligible
E2	135.0	105.0	105.5	0.5	0.4	No	No	Negligible
E3	124.9	97.2	97.7	0.5	0.5	No	No	Negligible
E4	115.3	90.8	92.7	1.9	1.9	No	No	Negligible
E5	119.9	94.2	94.8	0.6	0.6	No	No	Negligible
E6	118.9	93.9	94.5	0.6	0.6	No	No	Negligible
E7	182.6	129.7	130.0	0.3	0.3	No	No	Negligible
E8	172.3	124.8	125.3	0.5	0.5	No	No	Negligible
E9	102.6	81.5	81.8	0.3	0.3	No	No	Negligible
E10	156.6	116.9	117.5	0.6	0.5	No	No	Negligible

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. $>20\mu\text{g}/\text{m}^3$ )	Exceed (i.e. $>200\mu\text{g}/\text{m}^3$ )	Impact
P1-1	-	-	107.7	-	1.3	No	No	No
P1-2	-	-	92.1	-	1.3	No	No	No
P1-3	-	-	88.1	-	1.3	No	No	No
P1-4	-	-	85.7	-	1.3	No	No	No
P1-5	-	-	83.7	-	1.3	No	No	No
P1-6	-	-	82.1	-	1.3	No	No	No
P1-7	-	-	80.9	-	1.3	No	No	No
P1-8	-	-	79.9	-	1.3	No	No	No
P1-9	-	-	79.3	-	1.3	No	No	No
P2-1	-	-	108.8	-	1.9	No	No	No
P2-2	-	-	93.8	-	1.9	No	No	No
P2-3	-	-	89.5	-	1.9	No	No	No
P2-4	-	-	86.6	-	1.9	No	No	No
P2-5	-	-	84.3	-	1.9	No	No	No
P2-6	-	-	82.6	-	1.9	No	No	No
P2-7	-	-	81.3	-	1.9	No	No	No
P2-8	-	-	80.6	-	1.9	No	No	No
P2-9	-	-	80.2	-	1.9	No	No	No
P3-1	-	-	91.6	-	0.0	No	No	No
P3-2	-	-	87.5	-	0.0	No	No	No
P3-3	-	-	85.1	-	0.0	No	No	No
P3-4	-	-	83.4	-	0.0	No	No	No
P3-5	-	-	81.8	-	0.0	No	No	No
P3-6	-	-	80.5	-	0.0	No	No	No
P3-7	-	-	79.3	-	0.0	No	No	No
P3-8	-	-	78.8	-	0.0	No	No	No
P3-9	-	-	78.2	-	0.0	No	No	No
P3-10	-	-	77.7	-	0.0	No	No	No
P3-11	-	-	77.4	-	0.0	No	No	No
P3-12	-	-	77.3	-	0.0	No	No	No

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. $>20\mu\text{g}/\text{m}^3$ )	Exceed (i.e. $>200\mu\text{g}/\text{m}^3$ )	Impact
P3-13	-	-	77.1	-	0.0	No	No	No
P3-14	-	-	76.9	-	0.0	No	No	No
P3-15	-	-	76.7	-	0.0	No	No	No
P3-16	-	-	76.6	-	0.0	No	No	No
P3-17	-	-	76.4	-	0.0	No	No	No
P3-18	-	-	76.3	-	0.0	No	No	No
P4-1	-	-	90.4	-	2.1	No	No	No
P4-2	-	-	88.3	-	2.1	No	No	No
P4-3	-	-	86.6	-	2.1	No	No	No
P4-4	-	-	85.0	-	2.1	No	No	No
P4-5	-	-	83.6	-	2.1	No	No	No
P4-6	-	-	82.5	-	2.1	No	No	No
P4-7	-	-	81.5	-	2.1	No	No	No
P4-8	-	-	80.8	-	2.1	No	No	No
P4-9	-	-	80.2	-	2.1	No	No	No
P4-10	-	-	79.6	-	2.1	No	No	No
P4-11	-	-	79.3	-	2.1	No	No	No
P4-12	-	-	79.2	-	2.1	No	No	No
P4-13	-	-	79.1	-	2.1	No	No	No
P4-14	-	-	78.9	-	2.1	No	No	No
P4-15	-	-	78.8	-	2.1	No	No	No
P4-16	-	-	78.6	-	2.1	No	No	No
P4-17	-	-	78.5	-	2.1	No	No	No
P4-18	-	-	78.4	-	2.1	No	No	No
P5-10	-	-	79.8	-	2.1	No	No	No
P5-11	-	-	79.5	-	2.1	No	No	No
P5-12	-	-	79.3	-	2.1	No	No	No
P5-13	-	-	79.1	-	2.1	No	No	No
P5-14	-	-	78.9	-	2.1	No	No	No
P5-15	-	-	78.8	-	2.1	No	No	No

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Devt ( $\mu\text{g}/\text{m}^3$ )	With Devt ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	EC PC ( $\mu\text{g}/\text{m}^3$ )	EC Exceed (i.e. >20 $\mu\text{g}/\text{m}^3$ )	Exceed (i.e. >200 $\mu\text{g}/\text{m}^3$ )	Impact
P5-16	-	-	78.7	-	2.1	No	No	No
P5-17	-	-	107.7	-	2.1	No	No	No
P5-18	-	-	92.1	-	2.1	No	No	No

### Annual Mean PM<sub>10</sub> Results

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
E1	21.3	20.1	20.1	0.00	Negligible
E2	21.5	20.4	20.4	0.00	Negligible
E3	20.6	19.5	19.5	0.00	Negligible
E4	20.3	19.2	19.2	0.00	Negligible
E5	20.4	19.3	19.3	0.00	Negligible
E6	20.3	19.2	19.2	0.00	Negligible
E7	22.2	20.8	20.8	0.00	Negligible
E8	22.6	21.3	21.3	0.00	Negligible
E9	19.3	18.3	18.3	0.00	Negligible
E10	21.8	20.5	20.6	0.00	Negligible
P1-1	-	-	20.3	-	APEC A
P1-2	-	-	19.1	-	APEC A
P1-3	-	-	18.8	-	APEC A
P1-4	-	-	18.7	-	APEC A
P1-5	-	-	18.7	-	APEC A
P1-6	-	-	18.6	-	APEC A
P1-7	-	-	18.6	-	APEC A
P1-8	-	-	18.6	-	APEC A
P1-9	-	-	18.6	-	APEC A
P2-1	-	-	20.3	-	APEC A
P2-2	-	-	19.1	-	APEC A
P2-3	-	-	18.9	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P2-4	-	-	18.8	-	APEC A
P2-5	-	-	18.7	-	APEC A
P2-6	-	-	18.7	-	APEC A
P2-7	-	-	18.6	-	APEC A
P2-8	-	-	18.6	-	APEC A
P2-9	-	-	18.6	-	APEC A
P3-1	-	-	19.2	-	APEC A
P3-2	-	-	19.0	-	APEC A
P3-3	-	-	18.9	-	APEC A
P3-4	-	-	18.8	-	APEC A
P3-5	-	-	18.7	-	APEC A
P3-6	-	-	18.7	-	APEC A
P3-7	-	-	18.6	-	APEC A
P3-8	-	-	18.6	-	APEC A
P3-9	-	-	18.6	-	APEC A
P3-10	-	-	18.6	-	APEC A
P3-11	-	-	18.6	-	APEC A
P3-12	-	-	18.6	-	APEC A
P3-13	-	-	18.5	-	APEC A
P3-14	-	-	18.5	-	APEC A
P3-15	-	-	18.5	-	APEC A
P3-16	-	-	18.5	-	APEC A
P3-17	-	-	18.5	-	APEC A
P3-18	-	-	18.5	-	APEC A
P4-1	-	-	19.0	-	APEC A
P4-2	-	-	18.9	-	APEC A
P4-3	-	-	18.8	-	APEC A
P4-4	-	-	18.8	-	APEC A
P4-5	-	-	18.7	-	APEC A
P4-6	-	-	18.7	-	APEC A
P4-7	-	-	18.6	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-8	-	-	18.6	-	APEC A
P4-9	-	-	18.6	-	APEC A
P4-10	-	-	18.6	-	APEC A
P4-11	-	-	18.6	-	APEC A
P4-12	-	-	18.6	-	APEC A
P4-13	-	-	18.5	-	APEC A
P4-14	-	-	18.5	-	APEC A
P4-15	-	-	18.5	-	APEC A
P4-16	-	-	18.5	-	APEC A
P4-17	-	-	18.5	-	APEC A
P4-18	-	-	18.5	-	APEC A
P5-10	-	-	18.6	-	APEC A
P5-11	-	-	18.6	-	APEC A
P5-12	-	-	18.6	-	APEC A
P5-13	-	-	18.5	-	APEC A
P5-14	-	-	18.5	-	APEC A
P5-15	-	-	18.5	-	APEC A
P5-16	-	-	18.5	-	APEC A
P5-17	-	-	18.5	-	APEC A
P5-18	-	-	18.5	-	APEC A

### Daily Mean PM<sub>10</sub> Results

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
E1	5	4	4	0	Negligible
E2	6	4	4	0	Negligible
E3	4	3	3	0	Negligible
E4	4	2	2	0	Negligible
E5	4	3	3	0	Negligible
E6	4	3	3	0	Negligible
E7	7	4	4	0	Negligible

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
E8	7	5	5	0	Negligible
E9	3	2	2	0	Negligible
E10	6	4	4	0	Negligible
P1-1	-	-	4	-	No
P1-2	-	-	2	-	No
P1-3	-	-	2	-	No
P1-4	-	-	2	-	No
P1-5	-	-	2	-	No
P1-6	-	-	2	-	No
P1-7	-	-	2	-	No
P1-8	-	-	2	-	No
P1-9	-	-	2	-	No
P2-1	-	-	4	-	No
P2-2	-	-	2	-	No
P2-3	-	-	2	-	No
P2-4	-	-	2	-	No
P2-5	-	-	2	-	No
P2-6	-	-	2	-	No
P2-7	-	-	2	-	No
P2-8	-	-	2	-	No
P2-9	-	-	2	-	No
P3-1	-	-	2	-	No
P3-2	-	-	2	-	No
P3-3	-	-	2	-	No
P3-4	-	-	2	-	No
P3-5	-	-	2	-	No
P3-6	-	-	2	-	No
P3-7	-	-	2	-	No
P3-8	-	-	2	-	No
P3-9	-	-	2	-	No
P3-10	-	-	2	-	No

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
P3-11	-	-	2	-	No
P3-12	-	-	2	-	No
P3-13	-	-	2	-	No
P3-14	-	-	2	-	No
P3-15	-	-	2	-	No
P3-16	-	-	2	-	No
P3-17	-	-	2	-	No
P3-18	-	-	2	-	No
P4-1	-	-	2	-	No
P4-2	-	-	2	-	No
P4-3	-	-	2	-	No
P4-4	-	-	2	-	No
P4-5	-	-	2	-	No
P4-6	-	-	2	-	No
P4-7	-	-	2	-	No
P4-8	-	-	2	-	No
P4-9	-	-	2	-	No
P4-10	-	-	2	-	No
P4-11	-	-	2	-	No
P4-12	-	-	2	-	No
P4-13	-	-	2	-	No
P4-14	-	-	2	-	No
P4-15	-	-	2	-	No
P4-16	-	-	2	-	No
P4-17	-	-	2	-	No
P4-18	-	-	2	-	No
P5-10	-	-	2	-	No
P5-11	-	-	2	-	No
P5-12	-	-	2	-	No
P5-13	-	-	2	-	No
P5-14	-	-	2	-	No

Receptor ID	2018 Baseline (Exceedances)	2024 Without Devt (Exceedances)	2024 With Devt (Exceedances)	Change (Day)	Impact/Exceed
P5-15	-	-	2	-	No
P5-16	-	-	2	-	No
P5-17	-	-	2	-	No
P5-18	-	-	2	-	No

### Annual Mean PM<sub>2.5</sub> Results

Receptor ID	2018 Baseline (µg/m <sup>3</sup> )	Without Development (µg/m <sup>3</sup> )	With Development (µg/m <sup>3</sup> )	Change (µg/m <sup>3</sup> )	Impact
E1	14.2	13.2	13.2	0.0	Negligible
E2	14.3	13.3	13.3	0.0	Negligible
E3	13.8	12.8	12.8	0.0	Negligible
E4	13.6	12.7	12.7	0.0	Negligible
E5	13.7	12.7	12.7	0.0	Negligible
E6	13.6	12.7	12.7	0.0	Negligible
E7	14.9	13.6	13.6	0.0	Negligible
E8	15.1	13.9	13.9	0.0	Negligible
E9	13.0	12.2	12.2	0.0	Negligible
E10	14.5	13.4	13.4	0.0	Negligible
P1-1	-	-	13.3	-	APEC A
P1-2	-	-	12.6	-	APEC A
P1-3	-	-	12.4	-	APEC A
P1-4	-	-	12.4	-	APEC A
P1-5	-	-	12.4	-	APEC A
P1-6	-	-	12.3	-	APEC A
P1-7	-	-	12.3	-	APEC A
P1-8	-	-	12.3	-	APEC A
P1-9	-	-	12.3	-	APEC A
P2-1	-	-	13.3	-	APEC A
P2-2	-	-	12.6	-	APEC A
P2-3	-	-	12.5	-	APEC A
P2-4	-	-	12.4	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P2-5	-	-	12.4	-	APEC A
P2-6	-	-	12.3	-	APEC A
P2-7	-	-	12.3	-	APEC A
P2-8	-	-	12.3	-	APEC A
P2-9	-	-	12.3	-	APEC A
P3-1	-	-	12.7	-	APEC A
P3-2	-	-	12.5	-	APEC A
P3-3	-	-	12.5	-	APEC A
P3-4	-	-	12.4	-	APEC A
P3-5	-	-	12.4	-	APEC A
P3-6	-	-	12.4	-	APEC A
P3-7	-	-	12.3	-	APEC A
P3-8	-	-	12.3	-	APEC A
P3-9	-	-	12.3	-	APEC A
P3-10	-	-	12.3	-	APEC A
P3-11	-	-	12.3	-	APEC A
P3-12	-	-	12.3	-	APEC A
P3-13	-	-	12.3	-	APEC A
P3-14	-	-	12.3	-	APEC A
P3-15	-	-	12.3	-	APEC A
P3-16	-	-	12.3	-	APEC A
P3-17	-	-	12.3	-	APEC A
P3-18	-	-	12.3	-	APEC A
P4-1	-	-	12.6	-	APEC A
P4-2	-	-	12.5	-	APEC A
P4-3	-	-	12.4	-	APEC A
P4-4	-	-	12.4	-	APEC A
P4-5	-	-	12.4	-	APEC A
P4-6	-	-	12.4	-	APEC A
P4-7	-	-	12.3	-	APEC A
P4-8	-	-	12.3	-	APEC A

Receptor ID	2018 Baseline ( $\mu\text{g}/\text{m}^3$ )	Without Development ( $\mu\text{g}/\text{m}^3$ )	With Development ( $\mu\text{g}/\text{m}^3$ )	Change ( $\mu\text{g}/\text{m}^3$ )	Impact
P4-9	-	-	12.3	-	APEC A
P4-10	-	-	12.3	-	APEC A
P4-11	-	-	12.3	-	APEC A
P4-12	-	-	12.3	-	APEC A
P4-13	-	-	12.3	-	APEC A
P4-14	-	-	12.3	-	APEC A
P4-15	-	-	12.3	-	APEC A
P4-16	-	-	12.3	-	APEC A
P4-17	-	-	12.3	-	APEC A
P4-18	-	-	12.3	-	APEC A
P5-10	-	-	12.3	-	APEC A
P5-11	-	-	12.3	-	APEC A
P5-12	-	-	12.3	-	APEC A
P5-13	-	-	12.3	-	APEC A
P5-14	-	-	12.3	-	APEC A
P5-15	-	-	12.3	-	APEC A
P5-16	-	-	12.3	-	APEC A
P5-17	-	-	12.3	-	APEC A
P5-18	-	-	12.3	-	APEC A

## References

- <sup>1</sup> Department for Environment, Food and Rural Affairs (DEFRA) and the Devolved Administrations (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2)
- <sup>2</sup> The Air Quality (England) Regulations 2000 - Statutory Instrument 2000 No.928
- <sup>3</sup> The Air Quality (England) (Amendment) Regulations 2002- Statutory Instrument 2002 No.3043
- <sup>4</sup> The Air Quality Standards (Amendment) Regulations 2016- Statutory Instrument 2016 No. 1184
- <sup>5</sup> The Environment Act 1995
- <sup>6</sup> The Environmental Protection Act 1995.
- <sup>7</sup> Department for Communities and Local Government (February 2019). National Planning Policy Framework.
- <sup>8</sup> Mayor of London: Cleaning London's air, The Mayor's Air Quality Strategy (December 2010)
- <sup>9</sup> Mayor of London (March 2016) The London Plan: Spatial Development Strategy for Greater London Consolidated with alterations since 2011.
- <sup>10</sup> Mayor of London (December 2019) The London Plan – Intend to Publish: Spatial Development Strategy for Greater London.
- <sup>11</sup> London Borough of Camden. Local Plan (Adopted 2017).
- <sup>12</sup> London Borough of Camden. Draft Clean Air Action Plan (2019-2022).
- <sup>13</sup> Mayor of London (May 2016) London Local Air Quality Management (LLAQM) Technical Guidance (LLAQM.TG(16))
- <sup>14</sup> Defra (2018) Part IV The Environment Act 1995 and Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management Technical Guidance LAQM.TG16
- <sup>15</sup> Environmental Protection UK and Institute of Air Quality Management (Version 1.2 Updated January 2017). Land Use Planning & Development Control: Planning for Air Quality
- <sup>16</sup> Institute of Air Quality Management (Version 1.1 Updated June 2016). Guidance on the Assessment of Dust from Demolition and Construction
- <sup>17</sup> Ministry of Housing, Communities and Local Government (2019). National Planning Practice Guidance – Air Quality. Updated November 2019.
- <sup>18</sup> London Councils (January 2007). Air Quality and Planning Guidance – Revised Version.
- <sup>19</sup> Mayor of London (July 2014): The Control of Dust and Emissions during Construction and Demolition – Supplementary Planning Guidance.
- <sup>20</sup> Greater London Authority (April 2014): Sustainable Design and Construction - Supplementary Planning Guidance
- <sup>21</sup> London Borough of Camden. Amenity (September 2011 – updated March 2018).
- <sup>22</sup> London Borough of Camden (2019) Camden Planning Guidance – Air Quality. March 2019.
- <sup>23</sup> AQC & ENVIRON UK Ltd (2014). Air Quality Neutral Planning Guidance.
- <sup>24</sup> London Borough of Camden. 2018 Air Quality Status Report.
- <sup>25</sup> Defra Local Air Quality Management (LAQM) Support Pages. Available at: <http://laqm.defra.gov.uk/>. [Accessed on 07/02/2019].
- <sup>26</sup> London Air Quality Network. Available at: <http://www.londonair.org.uk/LondonAir/Default.aspx>. [Accessed on 07/02/2019].
- <sup>27</sup> London Atmospheric Emissions Inventory (LAEI). Available at: <https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013>. [Accessed on 07/02/2019].
- <sup>28</sup> Defra (2019) Defra Emission Factor Toolkit (v9.0) Available at <https://laqm.defra.gov.uk/review-and-assessment/tools/emission-factors-toolkit.html>, accessed on 05/02/2020.
- <sup>29</sup> Defra (2019) Defra NOX to NO2 Calculator (v7.1). Available at <https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc>, accessed on 05/02/2020.
- <sup>30</sup> Environment Agency Air Quality Modelling and Assessment Unit, 'Conversion ratios for NOx and NO<sub>2</sub>'
- <sup>31</sup> London Councils (2007) Air Quality and Planning Guidance. Revised version – January 2007.

Erith Contractors

# Appendix K

Cumulative Impact Assessment



# Cumulative Impact Area Central London Statement & Checklist

**Planning Reference** 2019/2773/P

**Site Address** 1 Kemble St, Holborn, London  
WC2B 4AN

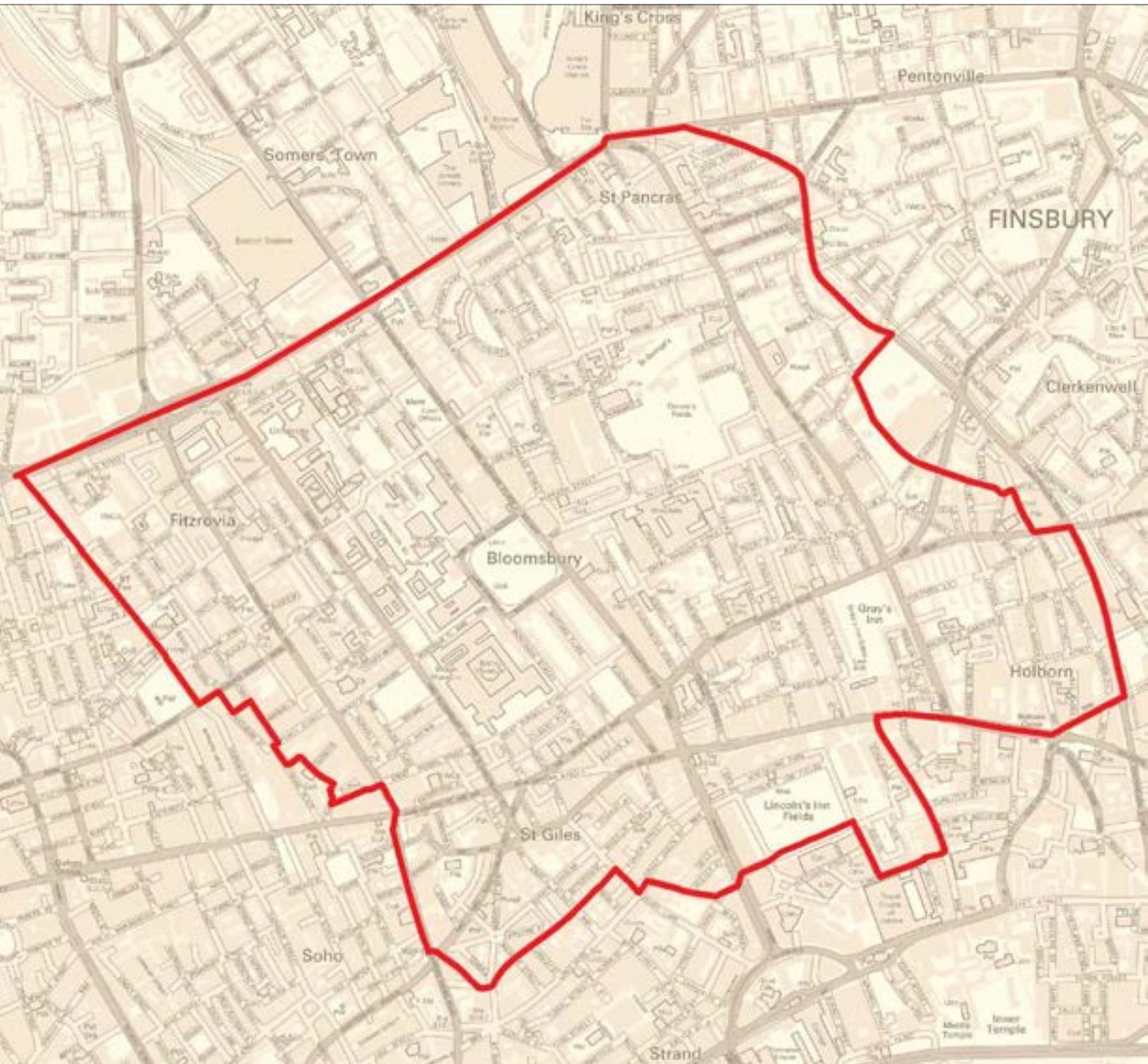


**Camden**

The Central London area represents just under a quarter of the total planned development activity in the borough despite only representing 13% of the geographical area. In addition to activity related to the redevelopment of sites, there is a significant amount of commercial buildings that undertake refurbishment works that have similar impacts but are not controlled by planning consents. The interaction of high levels of construction and construction traffic with established business/residential travel patterns is giving rise to heightened community concerns and mean that there is an increased need for careful management of construction activities and their potential impacts

The area is characterised by historic buildings with narrow streets alongside high density modern developments, with residential and commercial operations sitting side by side - the area also attract a lot of tourism, and as such the movement of people is much greater than just residents and employees. The busy nature of this area means that even the smallest redevelopment may give rise to complications with traffic and reports of public nuisance.

Noise and vibration from construction sites has the potential to give rise to significant adverse effects on health and quality of life. Based on our experience we know that some of these impacts can be effectively managed. However, this potential is affected by the challenges posed by Cumulative Impacts where the impacts of various construction sites create effects of greater significance than or different to that of each individual construction site. Managing the impacts of various sites in one area and ensuring a consistent approach to noise and vibration mitigation can be a major challenge in its own right.



Redevelopment proposals need think carefully how a site will be delivered, considering issues well beyond the site boundary, in particular:

- The proximity of properties, in particular the potential for structure borne noise and dust control
- Co-ordination with neighbouring sites, considering both construction traffic and business that require deliveries
- Communication and availability of data to a wider audience who may not be in close proximity to the development but nonetheless will be impacted, such as those who work in the area.
- The area is a designated Air Quality Management Area (AQMA) and the Council has made a commitment to reduce particulate air pollution to levels recommended by the World Health Organisation. In response, all sites in the Central London area will be required to undertake the following additional obligations as part of their Construction Management Plan. Developers/ Contractors will be required to justify (and for such justification to be made public) why any of the following elements cannot be achieved:-

## WORKS

- Assumption of no working at weekends – any proposals for weekend working will be considered on a case by case basis and communicated to local residents 14 days in advance of works
- Prior to proposing any road closures, weekend working or oversize deliveries (to which all require express approval from the Council) the contractor must provide evidence that they have approached neighbouring sites and attempted to coordinate any proposals with those of the neighbouring site.
- Prior to connecting a site to utilities (Gas, Water, Electric, Telecoms) the contractor must provide evidence that they have approached neighbouring sites (and the utilities providers) and attempted to coordinate connection between neighbouring sites and the various utilities.

## COMMUNICATION

- CMPs will be made available online (both prior to approval and post approval) such as on a dedicated webpage
- All logs (accident, complaint) will be made available online and a physical copy made available for residents to use and view
- Where there are neighbouring site or sites in close proximity that effect the local highway network, joint communication (i.e. Newsletters) will be required.
- Construction Working Groups will be conducted jointly with neighbouring sites
- All environmental monitoring data to be made available on-line and on site boards

## DELIVERIES

- A delivery log, specifying the type of vehicle, its purpose, registration number and time on site must be maintained online and updated at least on a weekly basis.
- Contractors will be required to provide evidence that they have communicated their proposed deliveries with neighbouring construction sites and any other business, and have coordinated the deliveries where possible.
- No deliveries shall be scheduled that will require the driver to wait outside the site before 8.00am (and vehicles will not be permitted to circulate the highway to avoid this requirement)
- A pre-booking system for managing deliveries must be operated. All deliveries must contact site at least 20min before arrival to allow the necessary checks to be undertaken

## MITIGATION AND RESPITE

- Adoption of localised mitigation measures such as washing the windows of neighbouring properties.
- Developments will be required to pay a Construction Impacts Bond to the Council to support the cost of Council officers addressing matters that should have been addressed by the contractor
- Dedicated wheel washing with rumble grids must be utilised unless agreed otherwise by the Council
- Green infrastructure, such as green screens/hoarding, should be utilised. Installation of filtration units, particularly where the site is near (within 250m) vulnerable receptor facilities (such as schools, nursing homes and hospitals)

## SITE CONDUCT

- A firm disciplinary policy, such as a two strike warning before removal from site must be operated
- Contractors must attain the Considerate Contractors Scheme 'Exceptional' score

- Contractor must employ an enforcement process to ensure that contractors vehicles do not idle
- A plan and process to encourage site operatives to arrive at the site by sustainable methods (including car sharing / pooling) must be presented and communicated
- CLOCS compliance monitoring results need to be reported to council
- All sites must ensure that Traffic Marshalls /Banksmen are appropriately trained, and that there is at least one operative on duty at any given time that has at least has 1+ year of experience in that role.
- The site must be kept damp at all times, proposed equipment for this purpose must first be agreed to by the local authority.
- Weekly 'toolbox talks' should be conducted with all site operatives to advise of the requirements expected by the Council.
- Site operatives should be identifiable by the public to the site, such as using a uniformed colour of work jackets or branding.

## MACHINERY AND EQUIPMENT

- All heavy goods vehicles (HGVs) are required to be Euro VI standard or better, and light duty vehicles (LDVs) are required to be Euro 4 petrol or Euro 6 for diesel, or better. Preference should be for zero to low emission equipment
- NRMM should be to stage IV of EU Directive 97/68/EC as a minimum, and an up-to-date NRMM log must be kept on-site and shared with Camden officers
- The site must connect to mains prior to works commencing to remove the need for diesel generators
- At least four real-time PM10 monitors (certified to MCERTS standard) must be used on site in continuous operation for the duration of the build (from three months prior to implementation of planning permission through to completion on site), at locations and to thresholds approved by the Council. Camden officers must be provided access to the raw data via an online platform, and automated exceedance alerts should be sent to [AirQuality@camden.gov.uk](mailto:AirQuality@camden.gov.uk) in addition to the contractor/developer on-site representatives
- Web-enabled monitoring equipment, allowing real time information accessible by the public should be deployed – including the use of emerging technologies.
- Environmental monitoring summary reports should be sent to Camden officers on a monthly basis

# CHECKLIST



All development sites in the Cumulative Impact Area which are required to submit a Construction Management Plan (CMP) or Demolition Management Plan (DMP) are required to complete this checklist.

The checklist will need to be presented for comment to the local community as part of the pre-submission CMP/DMP. The Council will not accept the submission of the CMP/DMP unless it receives both the completed CIA checklist . If a particular requirement cannot be met, stipulate the reason why and propose an alternative solution to achieve the objective

	Requirement	Response
WORKS	No noisy working at weekends – any proposals for weekend working will be considered on a case by case basis and communicated to local residents 14 days in advance of works	Section 60 "noisy" hours will be implemented with no "noisy" works on Saturday and Sunday working only with special permission from Camden Council
	Prior to proposing any road closures, weekend working or oversize deliveries (to which all require express approval from the Council) the contractor must provide evidence that they have approached neighbouring sites and attempted to coordinate any proposals with those of the neighbouring site	All logistic activities will be based on regular consultation/meetings with neighboring projects
	Prior to connecting a site to utilities (Gas, Water, Electric, Telecoms) the contractor must provide evidence that they have approached neighbouring sites (and the utilities providers) and attempted to coordinate connection between neighbouring sites and the various utilities	Development works utilise existing incoming services but should this position change such works will be co-ordinated with neighbouring properties if relevant.
COMMUNICATION	CMPs will be made available online (both prior to approval and post approval) such as on a dedicated webpage	Our site Specific website is active and the CMP, along with other supplementary information will be displayed. This will be regularly updated.
	All logs (accident, complaint) will be made available online and a physical copy made available for residents to use and view	<a href="http://www.spacehouseproposals.co.uk">www.spacehouseproposals.co.uk</a>
	Where there are neighbouring site or sites in close proximity that effect the local highway network, joint communication (i.e. Newsletters) will be required	The project website will have a complaints/ accident section. Physical copies will be issued on request. Contact details to request hard copies will be provided in the initial hand delivered newsletters
	Construction Working Groups will be conducted jointly with neighbouring sites	We have made contact with our neighboring projects to co-ordinate vehicle/pedestrian plans, news letters, information bulletins and invited them to join our CWG's.
All environmental monitoring data to be made available on-line and on site boards	The project website will have a monitoring report section. Physical copies will be issued on request.	
		External notice boards will display regularly updated environmental information.

	Requirement	Response
DELIVERIES	A delivery log, specifying the type of vehicle, its purpose, registration number and time on site must be maintained online and updated at least on a weekly basis	A strict delivery booking in protocol will be in place with daily records of all vehicles entering the site will be taken by our logistic team/site security.
	Contractors will be required to provide evidence that they have communicated their proposed deliveries with neighbouring construction sites and any other business, and have coordinated the deliveries where possible	Weekly delivery review meetings will be in place with neighboring sites as a minimum. Engagement with businesses will start when they reopen.
	No deliveries shall be scheduled that will require the driver to wait outside the site before 8.00am (and Vehicles will not be permitted to circulate the highway to avoid this requirement)	Unless under a specific movement order all deliveries will be planned to arrive after 8am and evenly spaced out through the day if possible. See CMP Appendix E for greater details on vehicle movements/swept path and timings of deliveries.
	A pre-booking system for managing deliveries must be operated. All deliveries must contact site at least 20min before arrival to allow the necessary checks to be undertaken	All transport, hauliers, suppliers and contractors will be issued our delivery booking form. This sets out various requirements inc. making contact 20 minutes before arrival
MITIGATION AND RESPITE	Adoption of localised mitigation measures such as washing the windows of neighbouring properties	Due to the limited demolition scope and minimal external works the need to wash neighbouring windows is not expected. We will however monitor the surrounding environment during our works and will offer suitable mitigation measures if required.
	Developments will be required to pay a Construction Impacts Bond to the Council to support the cost of Council officers addressing matters that should have been addressed by the contractor	Completed by the client
	Dedicated wheel washing with rumble grids must be utilised unless agreed otherwise by the Council	The existing concrete hard standing and vehicle through route will remain in place during the works so rumble grids should not be required. Wheel Jet washing equipment will be in place at both vehicle egress points for any unexpected event but daily use is not envisaged.
	Green infrastructure, such as green screens/hoarding, should be utilised. Installation of filtration units, particularly where the site is near (within 250m) vulnerable receptor facilities (such as schools, nursing homes and hospitals)	A 2.4m high hoarding will be erected around the perimeter of the site.

	Requirement	Response
SITE CONDUCT	A firm disciplinary policy, such as a two strike warning before removal from site must be operated	Erith operate a yellow/red card warning system
	Contractors must attain the Considerate Contractors Scheme 'Exceptional' score	The site is registered with CCS and will work to attain the required score
	Contractor must employ an enforcement process to ensure that contractors vehicles do not idle	Our no idling policy is contained within the delivery booking procedure that will be briefed to all drivers by either ourselves or the relevant supplier before arriving on site. Our trained Traffic Marshals will also enforce no idling if it is not being adhered to.
	A plan and process to encourage site operatives to arrive at the site by sustainable methods (including car sharing / pooling) must be presented and communicated	Option for car share etc are limited at the moment due to COVID-19. Any dwelling sharing operative will be encouraged to share together
	CLOCS compliance monitoring results need to be reported to council	CLOCS compliance results will be reported to Camden Council
	All sites must ensure that Traffic Marshalls / Banksmen are appropriately trained, and that there is at least one operative on duty at any given time that has at least has 1+ year of experience in that role.	All Traffic Marshals will have appropriate training and experience in the role. Any newly trained marshals will have a direct supervisor and is not to be left on duty by there self
	The site must be kept damp at all times, proposed equipment for this purpose must first be agreed to by the local authority.	Loading areas and vehicle transit routes will be dampened down to a suitable level at all times. Methods/equipment will be agreed with Camden Council before works start.
	Weekly 'toolbox talks' should be conducted with all site operatives to advise of the requirements expected by the Council.	Weekly tool box talks will be conducted and will contain suitable information about health and safety items and Camden Council requirements
	Site operatives should be identifiable by the public to the site, such as using a uniformed colour of work jackets or branding.	All site operatives will wear suitably branded PPE to identify them as building site staff and who they work for.

	Requirement	Response
<b>MACHINERY AND EQUIPMENT</b>	All heavy goods vehicles (HGVs) are required to be Euro VI standard or better, and light duty vehicles (LDVs) are required to be Euro 4 petrol or Euro 6 for diesel, or better. Preference should be for zero to low emission equipment	All Erith vehicles will be Euro VI compliant
	NRMM should be to stage IV of EU Directive 97/68/EC as a minimum, and an up-to-date NRMM log must be kept on-site and shared with Camden officers	The project is registered on the NRMM website and plant logs will kept up to date on a weekly basis.
	The site must connect to mains prior to works commencing to remove the need for diesel generators	The projects power requirements will be from the on site substations with no generators required
	At least four real-time PM10 monitors (certified to MCERTS standard) must be used on site in continuous operation for the duration of the build (from three months prior to implementation of planning permission through to completion on site), at locations and to thresholds approved by the Council. Camden officers must be provided access to the raw data via an online platform, and automated exceedance alerts should be sent to AirQuality@camden.gov.uk in addition to the contractor/developer on-site representatives	A Noise Dust Vibration Plan is in place and base line readings have been taken. Our dust monitoring will be recording PM-10 levels and the data will be available to Camden online and via weekly reports. Any exceedance of the agreed levels will automatically alert the site team and works will cease until the methods/incident have been fully reviewed.
	Web-enabled monitoring equipment, allowing real time information accessible by the public should be deployed – including the use of emerging technologies	All real time environmental monitoring data will be available online
	Environmental monitoring summary reports should be sent to Camden officers on a monthly basis	Environmental monitoring reports will be issued weekly
	The use of powered, percussive breaking equipment should be avoided. Where this is considered not possible early discussions with the Council.	The majority of the demolition work will be carried out using "muncher" attachments and sawing/diamond drilling. Where this not possible Camden will be consulted in good time before the works are due to start.

Erith Contractors

# Appendix L

Site Environmental Management Plan



# Site Environmental Management Plan

## Space House

### WC2B 4YN



<b>Client:</b>	<i>Seaforth Land Holdings Ltd acting on behalf of SLQR Trustee No 1 Limited and SLQR Trustee No 2 Limited as Co Trustees of SLQR Unit Trust No 3</i>		
<b>Principal Contractor:</b>	Erith Contractors Limited		
<b>Brief Description of Works:</b>	Soft strip, asbestos removal, MEP disconnections and plant removal, tower crane erection, temporary propping, and removal of Tower upper levels, propping to basement retaining walls and demolition to ground floor of the Kingsway Building.		
<b>Principal Designer:</b>	Gardiner & Theobald LLP		
<b>Rev No.</b>	<b>Details</b>	<b>Prepared by -Date</b>	<b>Authorised by - Date</b>
0.0	DRAFT Issue v3	Paul Millar – 22.06.20	
<b>Project Title:</b> Space House		<b>Hazardous Waste Producer Prefix Code:</b> TBC	
<b>Project Start Date (Estimated):</b> July 2020		<b>Projected Project End Date:</b> March 2021	
<b>Original Issue Date:</b> 14.05.20		<b>Latest Revision Date:</b>	

Table of Contents	
1.	Environment & Sustainability Policy Statement
2.	General Site Information
3.	Programme of Works (Demolition)
4.	Working Hours
5.	Pre-Implementation Methodology
6.	Post-Implementation Methodology
7.	Site Plan
8.	Vehicle Routes Considering Potentially Sensitive Receptors
9.	Environmental Management Structure
10.	Roles & Responsibilities
11.	Considerate Constructors Scheme
12.	Summary of Main Works
13.	Public Access and Highways (Including Cycle Safety)
14.	Potential for River Transport/Removal of Spoil
15.	Routes for Construction Traffic and Traffic Management Arrangements
16.	Road Closures/Abnormal Loads
17.	Plans for Site Arrangement (Including Storage Area) and Monitoring Equipment
18.	Noise and Vibration
19.	Dust and Air Quality
20.	Waste Management
21.	Water Resources
22.	Urban Ecology
23.	Archaeology and Built Heritage
24.	Lighting
25.	Pest Control
26.	Protection of Existing Installations
27.	Emergency Procedures
28.	Liaison with the Local Neighbourhood
29.	Liaison with Other Sites to Manage Cumulative Impacts
30.	Monitoring Proposals
Appendices	
A.	Noise Management Plan
B.	

## 1. ENVIRONMENT & SUSTAINABILITY POLICY STATEMENT

In accordance with its duty under current environmental legislation and guidance and in fulfilling its obligations to the environment, employees, members of the public, regulators and other interested parties who may be affected by its activities: The Directors of Erith have produced the following statement of policy in respect of the environment and sustainability.

It is our aim, as a responsible organisation, to operate proactively to prevent pollution to the environment and minimise our impact on climate change and other environmental risks. To facilitate this, we will pursue continuous improvement from year to year.

We undertake to discharge our statutory duties by:

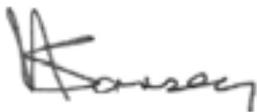
- Complying with applicable legal requirements, industry and regulator best practice and guidance and with other requirements to which the company subscribes regarding the protection of the environment.
- Implementing a sustainability focused ISO14001 certified environmental management system that allows our operations to track, report and minimise our impacts on waste, resource use, biodiversity, carbon and emissions.
- Identifying the environmental and sustainability risks of our activities and implementing appropriate preventative and protective measures that are effective, while considering new opportunities and technologies to improve our performance.
- Preventing environmental incidents through audit, inspection and reporting of "Near Miss" and environmental observations.
- Embedding sustainability in our decision making to provide sustainable solutions to the marketplace, people, community and the environment.
- Recruiting, appointing and developing personnel who have the skills, knowledge and ability to perform. We will maintain their competence through training, development and membership to corporate environmental bodies.
- Promoting environmental and sustainability awareness and good practice through effective communications, ensuring all employees are aware of their individual environmental and sustainability responsibilities.
- Building trust, ethics and integrity with our stakeholders and interested parties.
- Being diverse and inclusive while leading sustainable and ethical stewardship.
- Providing sufficient funds and resources to meet these objectives.
- Ensuring that environmental protection, sustainability and reducing our impact on climate change will not be compromised by other objectives.

All employees are encouraged to contribute actively towards achieving a working environment that is free of environmental incidents, accidents and impacts to the environment and climate, as well as share and promote opportunities where environmental risk is identified.

Our environment and sustainability policy will be reviewed annually to monitor its effectiveness and to ensure that it remains relevant and appropriate to the organisation.

This statement is to be read in conjunction with the responsibilities, arrangements, procedures and guidance that together form the environment and sustainability policy for Erith.

***Signed for and on behalf of the Executive Board:***



**Steven Darsey**  
**Company Chairman**  
**02/04/2020**

## 2. General Site Information

Overview of the main items of contract works.

These are divided in to two phases:

Pre-implementation Phase (Works that will take place to prepare the building for construction phase)

Implementation (Construction) Phase (Works that will take place in accordance with awarded Planning Consent and Section 106 agreement)

### Pre-Implementation Phase Activities

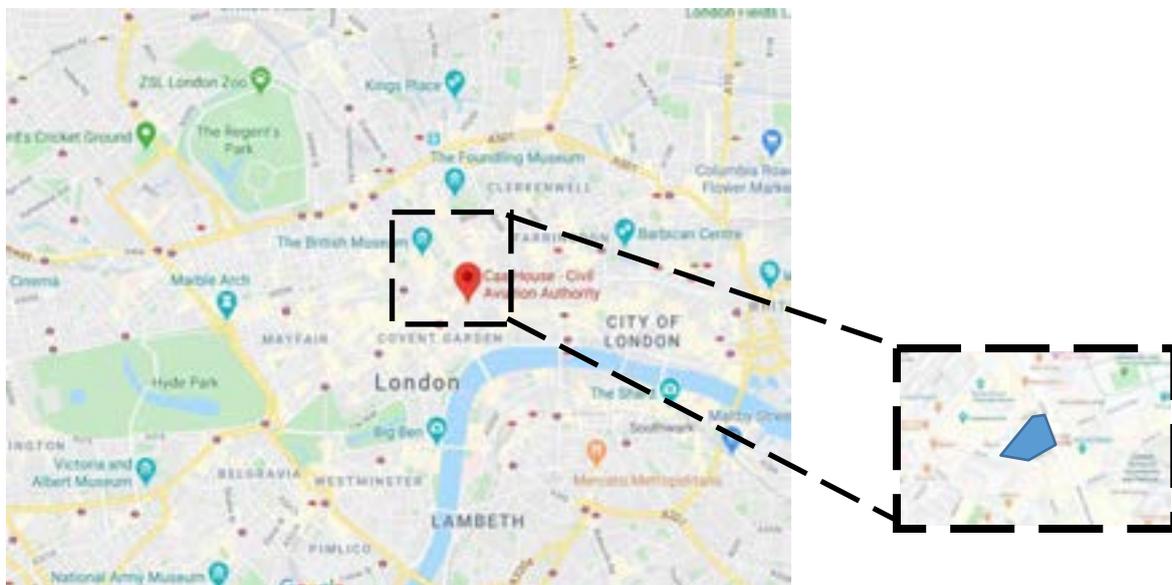
- Site establishment including welfare and hoarding.
- Installation of temporary electrics and services.
- Mechanical and Electrical Surveys.
- Protection to services & assets such as the UKPN substation
- MEP disconnections and plant removal
- Scaffold erection to encapsulate the works.
- Monitoring and surveying works
- Asbestos Removal works.
- Soft strip of all remaining non-structural items site wide to both structures
- Preparing the site for construction phase demolition and enabling works

### Implementation (Construction) Phase Activities

- Removal of windows and fenestration (ground floor and selected areas above).
- Erection of Tower Crane
- Temporary Works installation to Precast façade panels (Tower 15<sup>th</sup> Floor)
- Removal of Precast façade panels. (Tower 15<sup>th</sup> Floor)
- Temporary Works to basement retaining walls
- Structural opening up works to basement (One Kemble Street Tower).
- Ground Floor demolition works to Kingsway House.
- Removal of former filling station structure and two basement access ramps

Space House is a Grade II listed building situated within the London Borough of Camden. Space House was constructed in the late 1960's and it comprises of the Tower Block and Kingsway House which are independent but connect with each other via a link bridge structure at 1<sup>st</sup> & 2<sup>nd</sup> floor and basement levels. The area is surrounded by a mixture of retail, residential, commercial and landmark properties and high level of pedestrian traffic, cyclist activity with busy London underground infrastructure in the vicinity.

### Site Location



**Figure 1 Location of site**

*The majority of constraints identified during the tender process and site visit relate to its sensitive urban location and the proximity of nearby structures, adjacent construction sites, residential properties, established urban spaces and existing businesses.*

*The specific constraints are identified are as follows:*

- Traffic logistics, pedestrian volumes and neighbouring deliveries.
- High volume of traffic and foot flow on Kingsway Road
- Adjacent residencies, offices, commercial premises and maintaining pedestrian access to the nearby pedestrian footpaths. Holborn Underground Station and Covent Garden Station in close proximity to the works
- Co-ordinating deliveries to site
- Maintain access to UKPN substations on site
- Identification of Existing Services
- Heritage items on site
- Site establishment
- 24hr manned Security to prevent urban explorers
- Noise, dust and vibration controls.
- Protection of the public
- Neighbourhood Liaison
- Access to and egress from site
- Phasing of the Works
- Removal of material
- Liaison with Camden and Westminster Council Highways and Environmental teams.
- Liaison with residents and businesses in the vicinity of our works
- Management of nuisance from noise, dust and vibration
- BREEAM compliance with targeted requirements

Due to the nature of the works some residents and businesses may be disrupted during working hours. Erith have employed a Community Liaison Officer and have prepared a Neighbourhood Communication Strategy plan to alleviate any disruption to residents and businesses.

### **3. Programme of Works**

#### **Pre-Implementation Phase Activities**

Start Date: July 2020 (anticipated, actual date subject to confirmation)

Duration of Works: 9 Weeks

#### **Implementation (Construction) Phase Activities**

Start Date: August 2020 (anticipated, actual date subject to confirmation)

Duration of Works: 24 Weeks

### **4. Working Hours**

Site working hours will be as follows:

#### **Pre-Implementation Phase Activities**

Working times on site

Monday to Friday - 08:00 to 18:00

#### **Implementation (Construction) Phase Activities**

Working times on site

Monday to Friday - 08:00 to 18:00

Saturday - 08:00 to 13:00

Sunday - Only with prior consent from Camden Council

A Section 61 agreement will be entered with the Camden Environmental Team and this will incorporate reduced working hours for “noisy” works on a 2 hour on 2 hours off basis in line with their recommendations and current practices. This will allow for quiet periods between 10am - 12pm and 14.00pm – 16.00pm.

Saturday works 08:00 to 13:00 – No “noisy” works i.e. Percussive breaking, piling and earth works removal

No work will be carried out outside of these times or on Sundays or Public holidays without written consent. Best practical means to reduce noise will be implemented at all times.

## 5. Pre-Implementation Methodology

### Soft Strip

Initially a small element of pre strip will be required to facilitate the asbestos removal. Once complete and the asbestos materials have been removed releasing critical zones or complete floors the soft strip removal will progress.

**Please note-** A permit to proceed will be issued once Asbestos removal is complete.

Before the strip out works commence, ECL will protect specific assets of high significance. These include but are not limited to:

- The original kidney-shaped intake vent enclosure at the junction of Keeley Street and Wild Street, and the polygonal concrete plinth concealing the extract vent to the north; and
- The original elements of the interiors including the staircases in both the tower and Kingsway block, and the marble panelling and inscription tablet in the foyer of the Kingsway block.

The above assets will be protected by means of a timber and plywood enclosure. This will ensure that these elements are protected against the dust and any accidental damage from the site operations.



***Figure 27 - Kidney-shaped intake vent enclosure to be protected along with the surrounding flooring***



***Figure 28- Polygonal concrete plinth concealing the extract vent to the north to be protected***

Soft strip will also comprise removal of carpets, ceilings, fixtures, fittings, tenants rubbish, windows, internal glazing, non-load bearing partitions and mechanical and electrical installation. All works will be done in conjunction with the client's project team to ensure compliance with the specification.

The soft strip will be carried out in two phases by operatives skilled in works of this type. Phase One will comprise the removal of all combustible materials. The materials will be segregated into their waste streams and will be completely removed prior to the commencement of Phase Two.

Phase Two will be predominantly the mechanical and electrical installation, which will involve the use of "hot works". Phase Two will be carried out under a strict 'Hot Works Permit Regime'. Cold cutting should be used where possible to minimise/reduce the risk of fire.

The works will be predominantly carried out by hand with the use of mechanical aids such as trollies, wheelie bins etc. where possible to reduce exposure to manual handling.

All waste will be segregated and put into the relevant skip for removal for recycling where possible or landfill.



**Figure 29 - Example of Soft Strip removal works**

Materials generated from the soft strip will be segregated into the following for recycling

- Joinery, doors, architraves, skirtings, etc will have nails, screws and ironmongery removed and sent to the Particle Board Industry.
- Plasterboard will be sent for recycling by British Gypsum.
- Ferrous and non-ferrous materials will be sent to scrap metal merchants for recycling.

Any loose furnishings such as chairs, desks, filing cabinets will be transferred whole to the drop zone area by operatives wearing full PPE including hard hat, rigger gloves, high visibility vest and safety boots. Operatives will use team lifting to carry any potentially bulky or heavy items and ensure they assess each individual load as per their training.

**Please Note** – Operatives will undergo manual handling training prior to works taking place and wherever possible material will be mechanically lifted.

Where items are too large to be transferred whole, they should be carefully dismantled within individual rooms and placed by hand into suitable wheeled container. Care should be taken to ensure any nails or fixings are picked up immediately and placed into a separate bucket. Any jagged edges should be carefully protected using layers of duct tape. Once full the wheeled bin or similar should be transferred to the drop zone.

Other loose items such as papers or files should be carefully placed in the bins for transfer to the drop zone.

Once all loose items are removed, the removal of carpets and carpet tiles to the rooms and corridors will commence. The building has not been dormant for very long, however carpets may be dusty therefore in addition to the full PPE, FFP2 dust masks must be worn at all times.

Commencing from the room junctions, the corner of the carpet tiles will be carefully lifted using a demolition mattock. The carpet tiles will be lifted by hand until removed separated from the floor adhesive.

From here the carpet tiles will be carried whole into suitable wheeled container and transferred to the drop zone.

When removing sanitary ware and fittings, operatives will ensure that due regard is paid to maintaining an acceptable level of hygiene.

Operatives working in bathrooms will wear disposable coveralls and overshoes in addition to the full PPE of hard hat, eye protection, rigger gloves, high visibility vest, and safety boots.

Prior to early strip out works within the toilets being undertaken, the bathrooms will be disinfected with disinfectant / water and the area thoroughly cleaned. Once complete, items of bathroom fixtures including toilets, sinks and showers will be carefully removed whole and placed in a wheeled container and transferred to the drop zone area.

Any mirrors or glass screens will be removed whole and transferred to the ground floor loading area whole and placed carefully within a skip.

Existing internal doors will be removed whole by two operatives per door.

Once ready for removal, one operative will hold the upright door in a steady open position whilst the second operative removes the screw from the hinges.

Once loose, all screws will be picked up and placed in a bucket.

The external door frame will be removed by an operative using a mattock. Ensuring a clear working area, the operative will place the flat edge of the mattock behind the timber frame and lever the frame away from the partition. Care should be taken to ensure the frame is removed whole to minimise the risk injury from splintered timber. Any sharp jagged edges or exposed fittings should be carefully taped using duct tape prior to removal from the area.

Suspended ceiling tiles will be removed by operatives working off tower scaffold or podiums.

The tiles will be lifted out of the ceiling framework and lowered to a second operative and stacked for removal.

The wires holding the framework to the joists will be cut with nips and the framework lowered to the ground. Where necessary the bolts to the joist will then be ground flush with the joist or concrete panel allowing clearance of all other items such as plasterboard and stud partitions.

Due to the health risks associated with gypsum plaster, a strict regime of damping down will be adhered to by operatives and sheets will be removed whole to eradicate the risk of particle release.

Full PPE including gloves, disposable coveralls, eye protection and FFP3 masks will be mandatory for this element of works. Self-erect scaffold or Podium steps will be used for access to high level. All soft strip operatives to be asbestos awareness trained.

Where door frames have been removed, the edge of the plasterboard partition will be dampened and carefully levered away from the studwork using a mattock. Once the fittings have 'blown' through the plaster the board will be removed whole and stacked on one side of the corridor. Any fixings or jagged edges will be removed immediately and placed in a separate bucket. Any broken sections will be damped down prior to moving and stacking. A clear access route will be maintained through all areas.



**Figure 30 – Example - Soft strip almost complete with segregated material and clear access routes**

Rockwool insulation will be carefully removed and placed in rubble sacks. These will be sealed using duct tape and carried to the ground floor loading area.

Timber studs will be de-nailed immediately once plasterboard is removed and fixings placed in a bucket. Timber noggins will be knocked out from between the studs and placed immediately in a wheeled bin for transfer to the drop zone. The studs will then be pulled horizontally and stacked carefully in a pile on the opposing side of the corridor from the plasterboard.

Generally, all materials will be deposited vertically down the existing lift shafts or internal well holes before being loaded out on to skips located in the site compound.

Limited soft strip material will be stockpiled on site for short durations until such time as the full works access has been formed from which point it can be loaded directly onto vehicles within the confines of the site.

Designated access points will be maintained throughout the soft strip works to allow for the safe transporting of materials through the site and away from other access routes. All soft stripped waste will be brought to a central processing area where the material will be loaded into skips and taken off site to a waste processing centre.

Any bike racks within the premises of the site compound will be removed and safely stored for future use. That will enable Erith to open up logistics space and reduce the interface with 3<sup>rd</sup> Parties and the public. The bike racks will be handed to the Client and will be temporarily stored to a storage provided elsewhere outside this contract.

## Latex Screed Removal

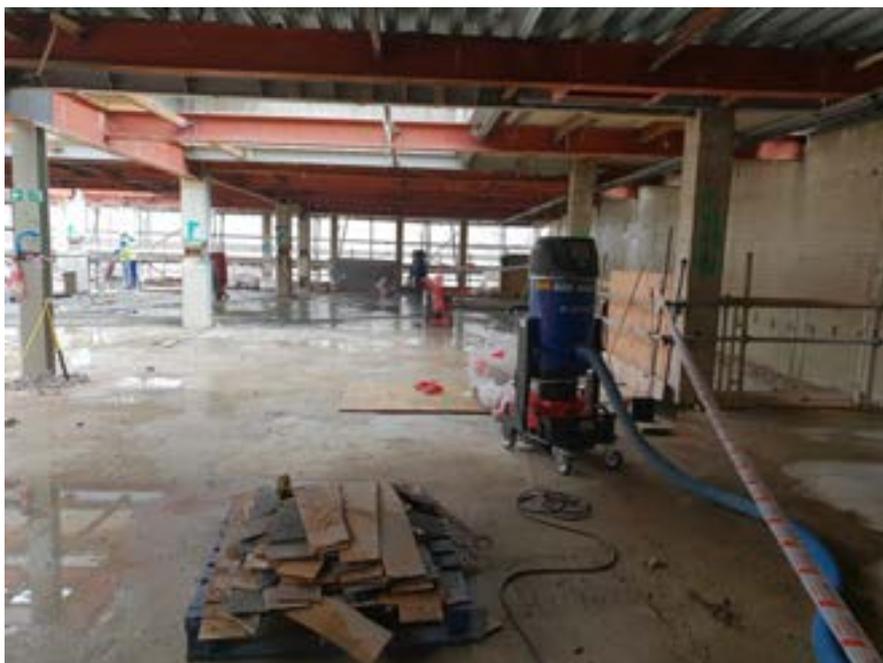


**Figure 39 -Pram Scabblers for the removal of Floor Screed**

ECL will remove the latex screed to both structures starting from the top and working its way to the ground floor using the scabblers shown above.

The scabblers will be directly attached to a wet vacuum that will place all arising directly into a bag. These will be placed into an appropriate bag, dependant on ACM presence, and stored suitably for transfer off site.

The material will be stored in suitable demolition arisings bags until removed off site.



Example of scabblers vacuum unit



Scabbler and vacuum in use



Example of removed screed

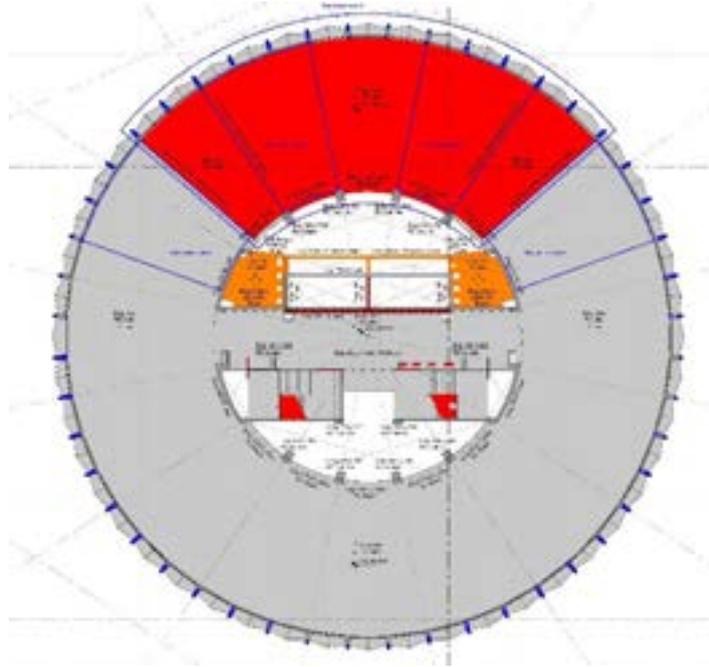
## 6. Implementation (Construction) Phase Methodology

### Demolition and Enabling Works

#### Structural alteration and opening works to Tower and Kingsway Building

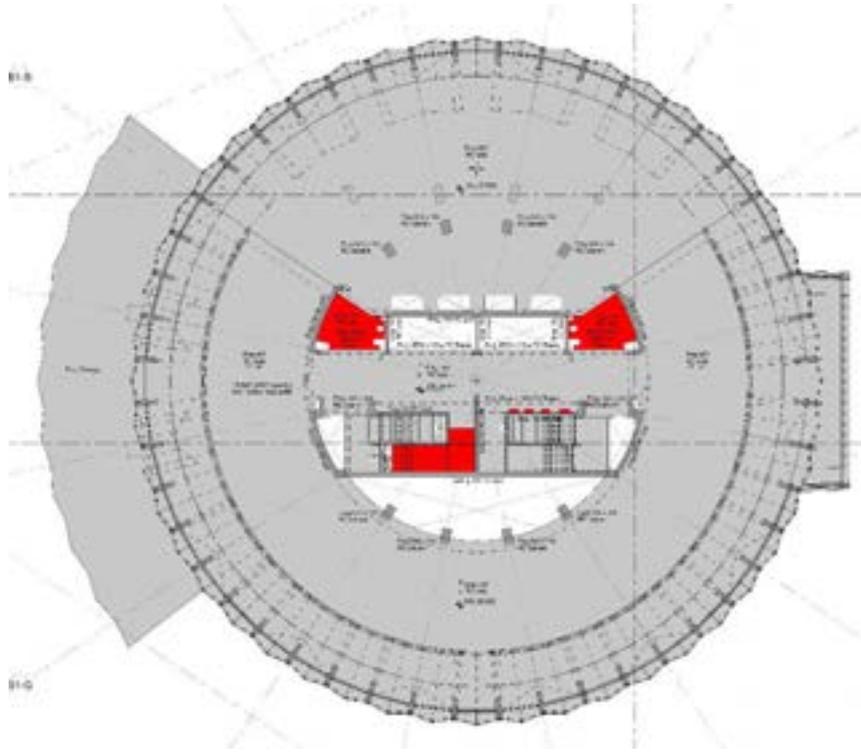
As part of the demolition package, ECL will have to form openings both within the Tower and Kingsway building. With regards to the openings to the Tower, the openings on the 15<sup>th</sup> Floor of the structure will be undertaken via a Brokk. The same mechanical equipment will be used for the riser openings between the Mezzanine and the 15<sup>th</sup> Floor as well as for the slab openings to the 1<sup>st</sup> Floor.

Prior to the demolition works though, the retained sections of the slab will require back propping that will provide them with temporary support.



**Figure 31 - Back propping & Openings on 15<sup>th</sup> Floor within the Tower**

Following the installation of the back propping to the retained structure, ECL will undertake saw cutting at either side of the sections to be demolished. Prior to any works, ECL will establish exclusion zones around the areas that demolition works will take place. The saw cutting will provide with a clear demolition face and it will also reduce the induction of load into the retained structure. Following the completion of the saw cutting works, ECL will utilise a Brokk to undertake the removal of slabs sections as per figure 31. The material will be transported down to ground level via the hoist or the lifts shafts as described in the logistics section where it will be loaded to attendant HGVs and be disposed off site. The same methodology will be applied for the removal of the stair flights leading to the 16<sup>th</sup> floor and the opening works for the risers at the same floor.



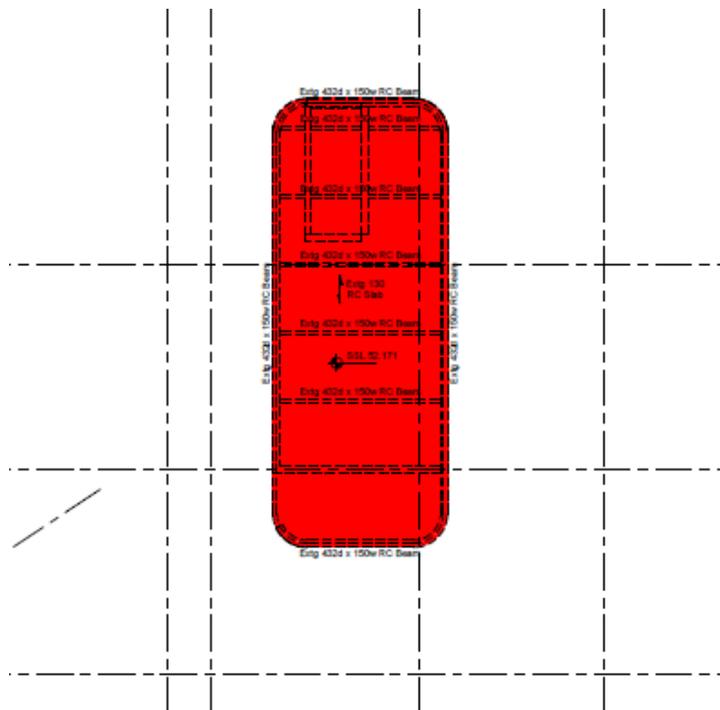
**Figure 32 - Opening works at 1st Floor**

With regards to the structural alteration and opening works to Kingsway building, openings in all floor levels will be formed to enable the future works. The openings to the 8<sup>th</sup> Floor differ to the ones required in between the 2<sup>nd</sup> and 7<sup>th</sup> Floor. In addition to that, the openings to the 1<sup>st</sup> Floor differ to the openings to the rest of the structures.

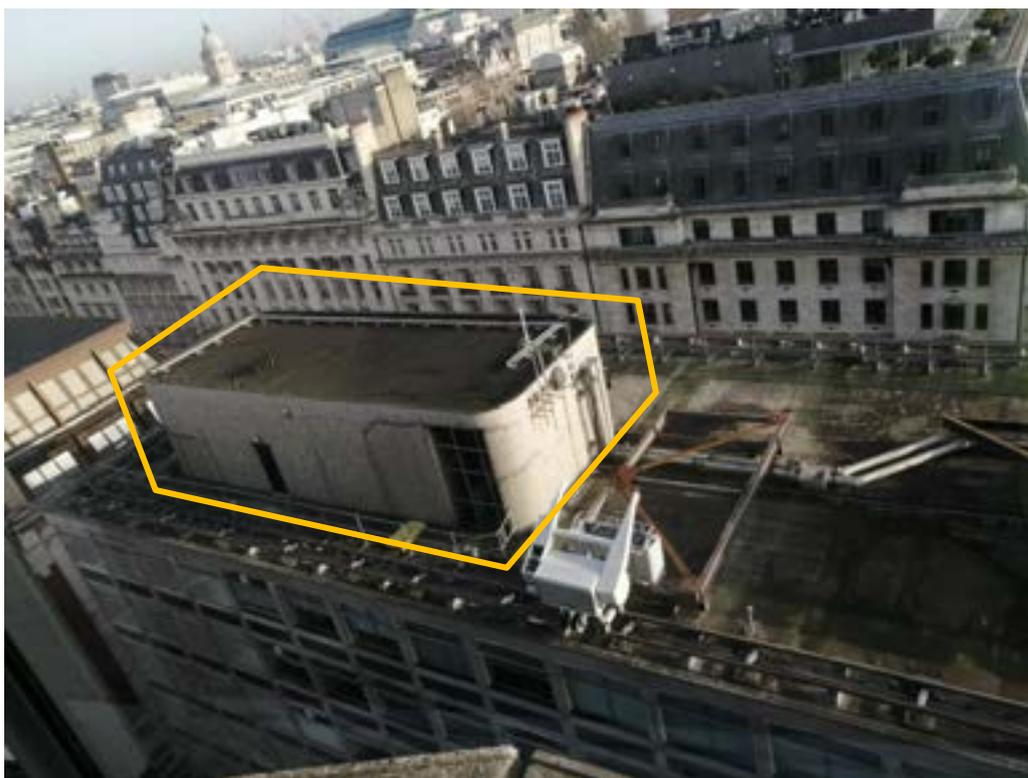
**Please Note:** ECL will undertake intrusive surveys to the mosaic tiles at the roof as well as a trial removal and will assess whether or not they can be salvaged. ECL will liaise with the client and the architects of the project for the salvage of the mosaic tiles during the above process and issue a report which will highlight the process that ECL will undertake during their removal as well as the conclusions made from the trial removal works.

**Please Note:** The areas within the Kingsway building that are to be retained and are of historical importance will be protected during the works by means of timber and plywood. The areas include mainly the mosaic tiles that are to be kept in place during the works.

ECL will commence the demolition works on the roof which will be undertaken via a combination of hand and mechanical demolition techniques. The plant that will be utilised for these works is a Brokk. ECL operatives will be also working of a scaffold erected around the roof structure



**Figure 33 - Roof Structure to be removed at Kingsway building as indicated in the structural drawings**

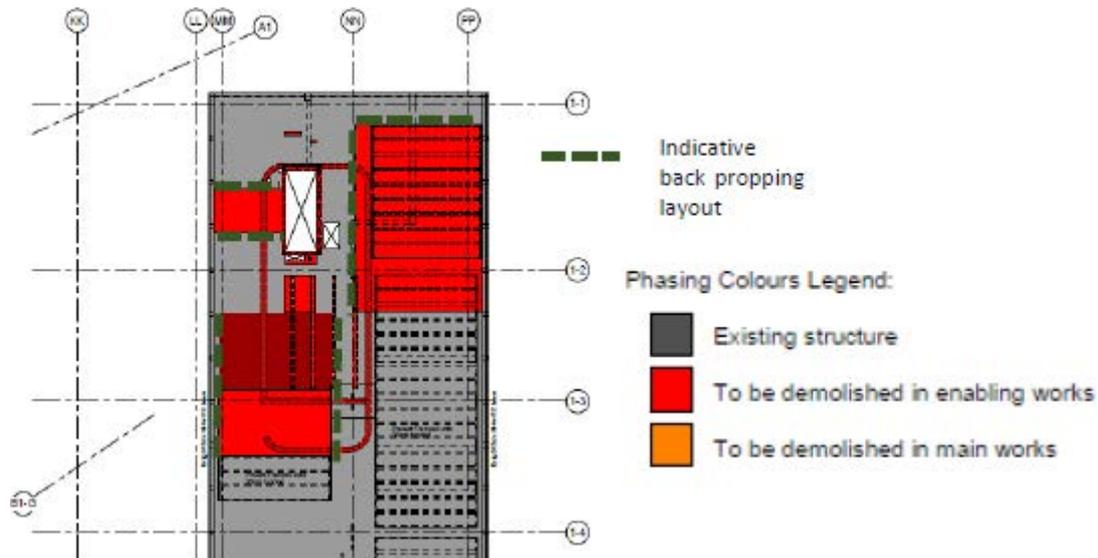


**Figure 34 -Roof Structure on Kingsway building to be removed**

The opening works will follow a top down sequence where the works will commence from the roof. Based on the layout of the floors and the structural demolition drawings the perimeter beams of the structure in 9th floor are supported by the bearing walls of the 8th floor. These walls will be demolished without requiring any back-propping scheme.

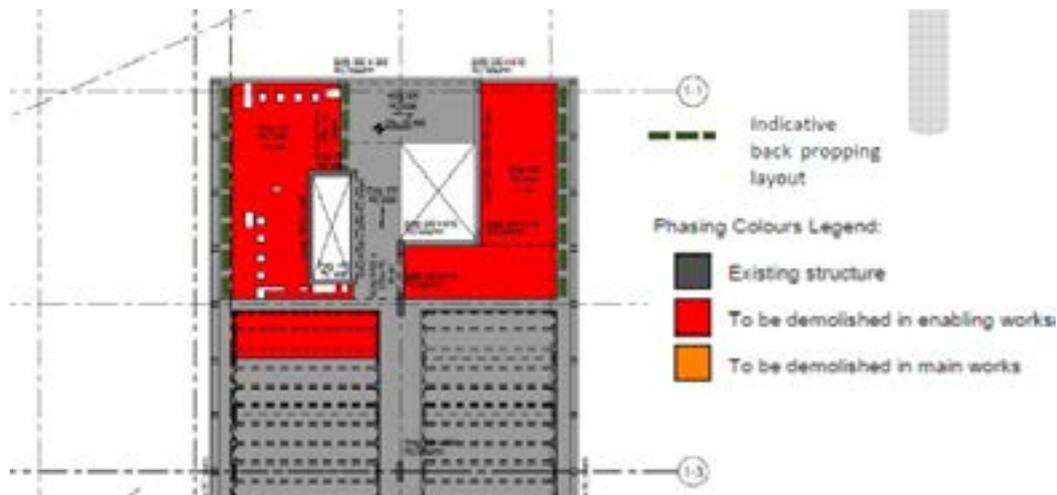
Slab trimming support steelwork shall be installed to the edge of the required new openings prior to local slab cutting and demolition ensuring safe distribution of the loading to slab level below/back propping. ECL will utilise a Brokk to undertake the openings

between the 8<sup>th</sup> and Ground Floor. The produced material will be transported via a bobcat towards the loading area within the courtyard of the site.



**Figure 35 - Demolition areas 8th Floor**

The areas to be demolished from the 2<sup>nd</sup> to the 7<sup>th</sup> Floor consist of RC slabs and precast frampell units. ECL will utilise the same demolition techniques as above.

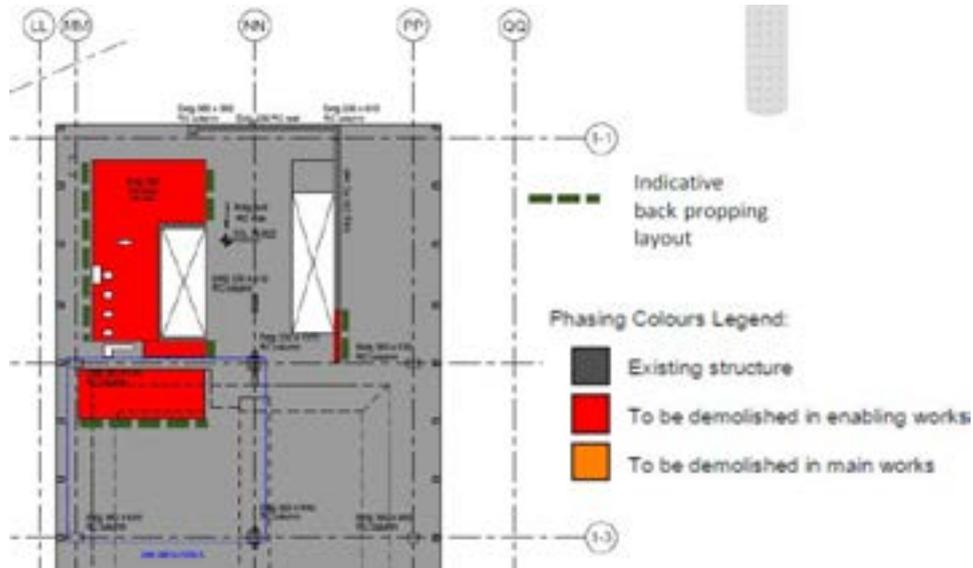


**Figure 36 - Demolition areas between 2nd and 7th Floor**

Prior to any demolition works taking place, ECL will install the associated temporary works which will consist of back propping at the edges of the retained slabs as per figure 35 and

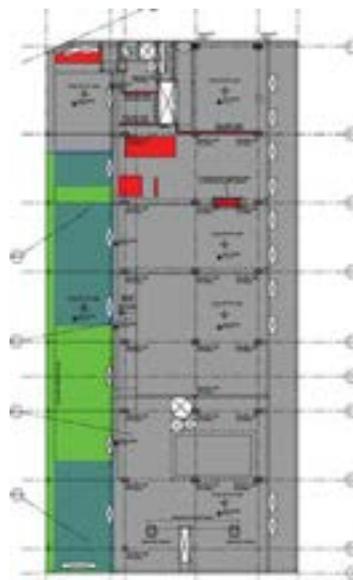
36. Following the installation of back propping ECL will saw cut the slabs at the line of the demolition to provide with a clear-cut finish. An exclusion zone will be set up around the demolition areas. This exclusion zone will remain in place until the main contract works. The exclusion zone, post demolition, will also include edge protection to prevent any fall from height.

37. The area to be demolished at the 1<sup>st</sup> defers to the above as per the figure below. The demolition scope on the 1<sup>st</sup> Floor is limited to the west of the structure and it include slab openings works. ECL will utilise the above techniques for the removal of this section of slab and will install the associated back propping as per the figure below.



**Figure 37 -Areas to be demolished within 1st Floor**

The same as above will apply for the highlighted red sections of ground floor as per figure 38 below.



**Figure 38 - Sections of Ground Floor Slab to be removed**

The rest of the ground floor removal works (highlighted with green) will be undertaken with different plant and will be described later in this Method Statement.

**Please Note:** The areas within the Kingsway building and the Tower which are made from HAC, next to the openings works, will be weatherproofed, to remove the risk associated with corrosion. Should water be encountered in these areas, then ECL operatives will dry it immediately, it will be reported to the structural engineers and a survey will be undertaken to ensure that no damage has been caused. A detailed method statement for the protection measures against any corrosion will be produced before undertaking these wor

## **Demolition works above the 15<sup>th</sup> Floor of the Tower block**

Prior to the commencement of the demolition works of the roof and the 16th Floor of the Tower, ECL will have the roof plant removed via a mobile crane lift. In addition to that, the Tower Crane will be erected which will enable the lifting of two Brokks/8T excavators on the roof. Moreover, and as per our sequence and Swanton Engineering assessment, the temporary works, associated with the support of the precast T pieces will have been installed. The Tower Crane will assist with the lifting of these items and their installation in place.

The slab will need to be back propped in order to allow plant to operate on it. A load test can be carried out to determine if the slab will be able to carry the weight of plant without back propping. The slabs of the Tower including the 15th, 16th and the Roof Slab are made of RC. Therefore, and taking also into consideration the shape of the structure, the method chosen for the demolition is a top down method.

**Please Note** – To minimise the noise and vibration disturbance from the demolition activities, Erith will use Pulverisers and Cracker attachments fitted to the end of the demolition spec excavators sat upon the floor plate.

Breaking will only be required for folding over column sections by breaking off concrete and exposing the steelwork. Use of the breaker attachment will be within strict accordance with the Camden Council Code of Construction Practice (CoCP) document.

Early site investigation works will be carried out to ensure the assumptions made by Erith at the tender stage and assumed temporary works requirements are correct

**Please Note** - All elements of the structure will be demolished with scaffold screens erected along perimeter to protect the works and minimise the risk of noise and airborne dust travelling beyond the site boundary.

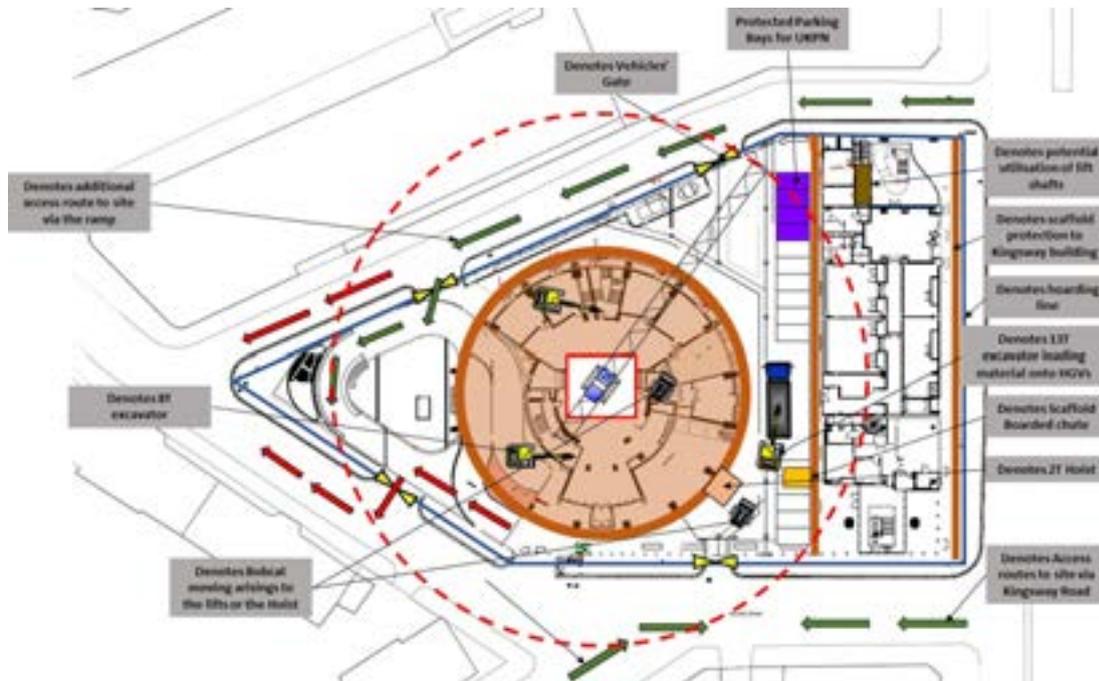
Prior to any demolition taking place the associated temporary works will be installed and signed off by the Erith Temporary Works Coordinator. When the temporary works have been signed off, an Erith permit to demolish will be issued and the works will commence.

As stated, Erith plan to demolish with a top down mechanical demolition method with the works being serviced by the Tower Crane to lift machinery at the roof.

**Please Note:** A lift plan will be produced for the lifting operation of the Brokks/8T excavators and the bobcat.

The crane will lift the plant on to the roof to commence demolition to the 15<sup>th</sup> floor. The plant and main roof will first be stripped and the larger equipment pieced up by trained and competent burners. As mentioned above, all burning operations will use a Oxy-Propane mix and all Hot Works will be subject to a Erith Hot works permit and a 1 hour fire watch.

Once the sections have been pieced up into manageable pieces, they will be loaded into the lift shafts and will be removed as per our logistics proposal. This will create working room for landing plant and equipment that will allow the demolition of the remaining structure.



**Figure 44 - Demolition of the Roof and the 16th Floor of the Tower**

Upon the roof slab, a section will be identified and sprayed out by the onsite engineer and the section will then be demolished with Brokks/8T excavators equipped with muncher and hydraulic breakers subject to back propping temporary works.

The machines will then continue on a floor by floor basis across the full footprint of the site and until the 15<sup>th</sup> floor. Materials will be disposed of via the lift shafts or the Hoist. During the demolition the machines will be lowered to the below slab via the Tower Crane.

Material will be transferred down existing lift shafts or the hoist to the ground floor where a bobcat as per the figure 34, will be taking them towards the loading area. A 13T excavator will be loading the arisings onto attendant HGVs.

All hard demolition materials from the structural demolition of the building will be removed off site for recycling. All arisings will be processed and segregated at each demolition floor level with the reinforcement segregated and removed from site.

Dust emissions will be controlled at the working face, lift shaft and loading away area by a fine water spray. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding at basement level.

The site manager will call upon a road sweeper when necessary to keep the surrounding streets clean. This will provide a safe environment for the public and a visually pleasing site. Upon completion of the demolition, ECL will leave a clear and safe site.

#### **Removal of Ring Beam and T Piece façade Elements of the Tower (15<sup>th</sup> Floor)**

The T-unit was installed on to the façade first, then the facia unit landed on top. The two elements are structurally connected by the concrete which formed the ring beam and slab. As such both units are to be considered as a single element. Approximate weight of the combined units is approximately 10T which is subject to confirmation. It is proposed to install

a lifting cradle as per the figure below, formed from propriety equipment prior to the cutting up of the sections. This cradle will allow the units to be lifted to the ground via the Wolff 275 Tower Crane.

ECL will utilise two groups of operatives that will undertake the saw cutting works, the installation of the temporary support to the precast façade and ring beam and the support of the Cradle and temporary prop to the existing structure.

The sequence of works will be as per below:

1. Make openings in the 16<sup>th</sup> Floor slab for the cradle installation.
2. Undertake the radial wire saw cut behind the unit to separate the ring beam from the slab and install slab back propping
3. Install the cradle to encapsulate the T piece and the ring beam
4. Install temporary vertical steelwork (prop) fixed on the 15<sup>th</sup> floor Slab against the Cradle.

***\*The stages until number 4 will have been completed prior to the demolition of the 16<sup>th</sup> Floor Slab. The stages between number 5-10 will be completed after the demolition of the 16<sup>th</sup> Floor.***

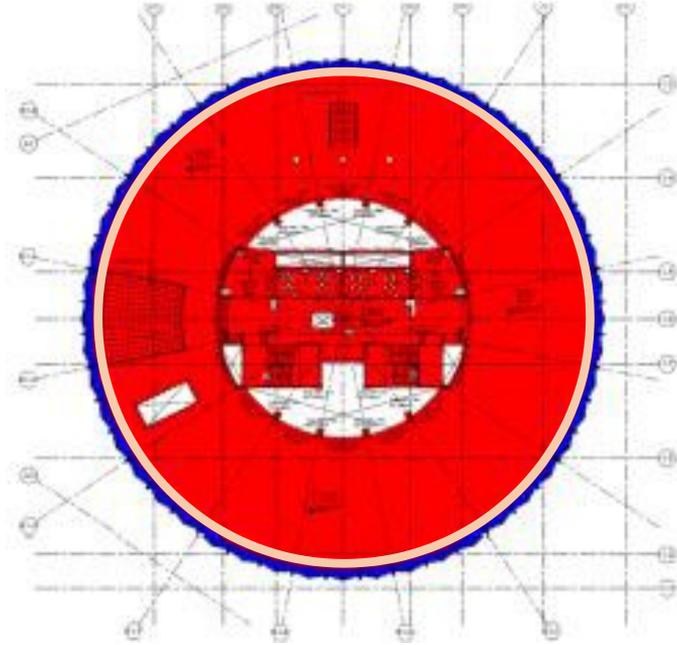
Attach the lifting hooks and connect to the Tower Crane with straps

5. Complete the vertical wire saw cut between the adjacent units
6. Load the straps via the Tower Crane
7. Complete the horizontal wire saw cut between the unit and the façade below.
8. Release Temporary prop from the 15<sup>th</sup> Floor
9. Lift out unit for storage to the Basement.

The two groups of ECL operatives will be working concurrently. However, when the lifting and the wire saw cutting works are taking place, the other group of operatives will be working until stage number 7.

The wire saw cutting works for the separation of the ring beam to the slab will be undertaken by competent and trained ECL operatives who will follow a specific sequence which will be briefed to them by the ECL site manager. Two holes will be diamond drilled through the slab, one in each corner. The drilling rig will be fixed to the wall with M12 shells and speed bolt.

The drill motor and drill bit attached to the rig. As the drill paces trough, the wall the water that passes through the drill bit will be collected with the wet vac. The cutting wire will be threaded through the hole at one end of the cut and back through the other end of the cut. The wire will be threaded through the pulleys of the wire saw pack and connected together with a crimp. On the opposite side of the slab from the wire saw pack, a water tray will be fixed covering the wire. The tray will protect this area from the water spray, and make it easier to collect the water with a wet vac. To cut the slab the pulleys inside the wire pack will tensioned up the wire and start to rotate the wire around the cut area. The pulleys will pull away from each other making the wire shorter around the cut area. This will continue until the wire has cut completely through the slab. The water on both sides of the wall will be collected continues until the cut is completed.



***Figure 45 -Circumferential Cut between the Ring beam and slab***

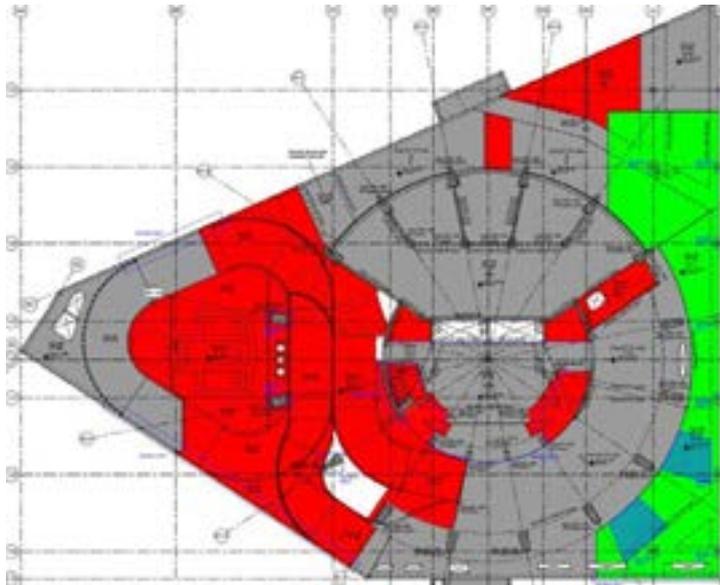
The rest of the wire saw cutting will be completed following the demolition of the 16<sup>th</sup> Floor and will be focused on the separation of T pieces between each other the façade below.



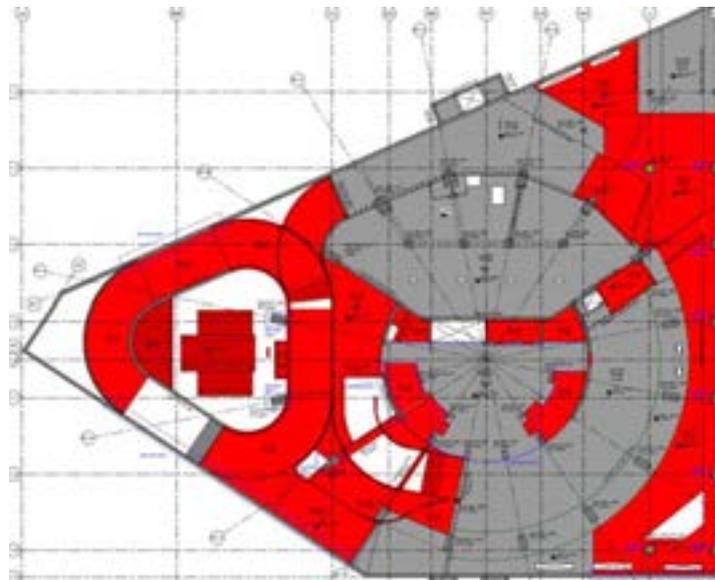
***Figure 46 - Temporary Works installation for the T pieces***

**Ground Floor and Basement Slab of Kingsway and Tower Building.**

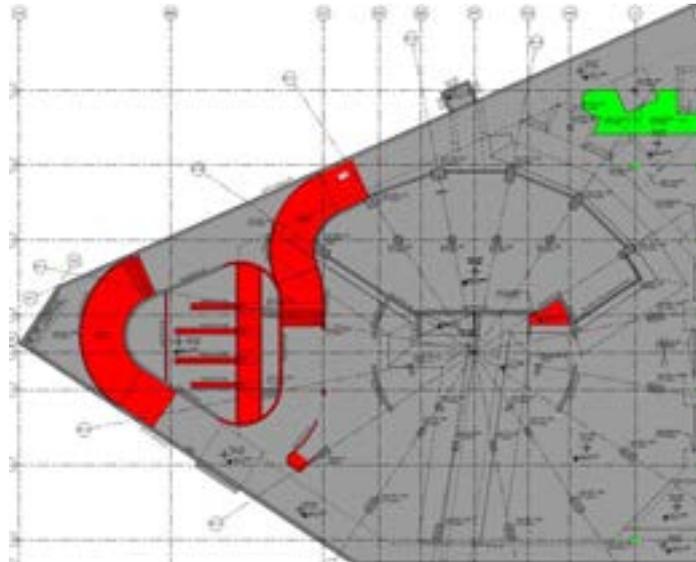
As per the structural drawings, sections of the ground floor slab and basement slab will require removal at the Kingsway building and the Tower of Space House.



**Figure 47 - Ground Floor slab openings at Tower**



**Figure 48 - Basement level 1 Openings**



**Figure 49 - Basement Slab level 2 opening works at Tower highlighted in red**

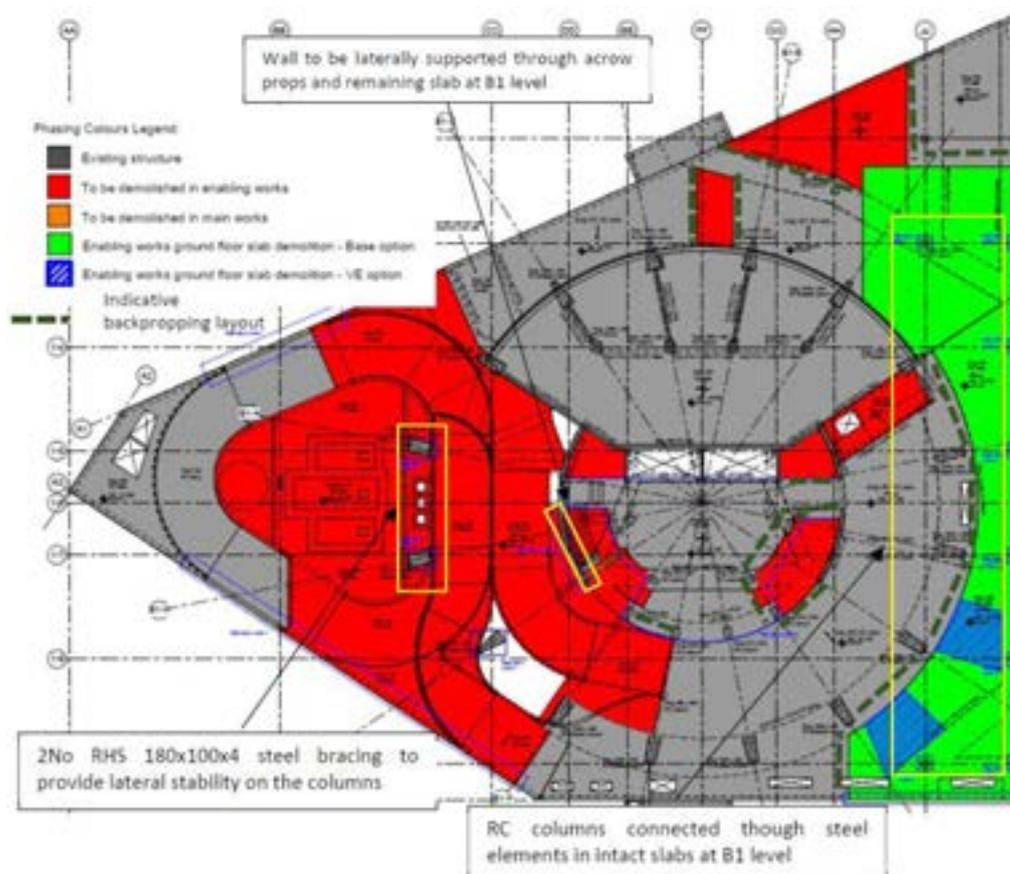
Based on the demolition drawings, openings will be formed on the ground level of the Tower. ECL will utilise a 13T excavator with breaking and pulveriser attachments to undertake these works. The material will be loaded as per our logistics plans. A bobcat will be transporting material towards the loading areas where a 13T excavator will be loading the demolition arisings onto HGVs. ECL may also utilise skips where the 13T excavator will be loading the arisings. The Tower Crane will be then lifting the skips onto the loading area where they will get directed off the site. The demolition will commence from the ground floor and continue towards the B2 level of the Tower where the ramps will be removed and the internal walls as per figure 48. ECL will utilise the same plant as per the demolition of the ground floors sections.

The slab including the wall adjacent to ramp on the west part of the structure will be deconstructed, however with the wall being demolished down to the surface of the ramp and remaining unaffected in the lower basement levels the stability of the ramp is not going to be affected.

The reinforced concrete wall near the centre west part of the structure will require temporary propping at B1 level since slabs on both sides of it will be deconstructed. To avoid laterally stability issues, acrow props will be installed at floor B1 floor level to provide lateral restraints on the walls. The props will be connected on the wall and the remaining slab through resin anchors utilizing vibration resistance.

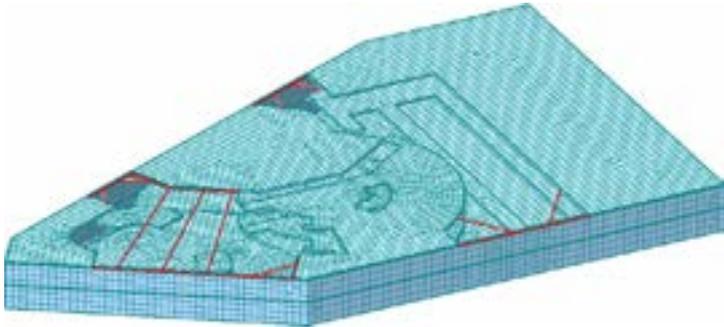
In addition, the two columns on the west part of structure will be required to temporary supported at B1 after the demolition of the slabs. Using 2No. RHS 180x100x4 steel section and bracing the columns will have the lateral stability required to safely transfer the loads into foundations.

The columns on the east part of the structure will be connected to the remaining slabs through horizontal steel elements which will provide the lateral stability when openings are formed. In further stages, the connection between the steel members and columns will be investigated to avoid significant horizontal forces into the system. As the steel members are not supposed to transfer any bending moment, connections are expected to be of limited complexity.

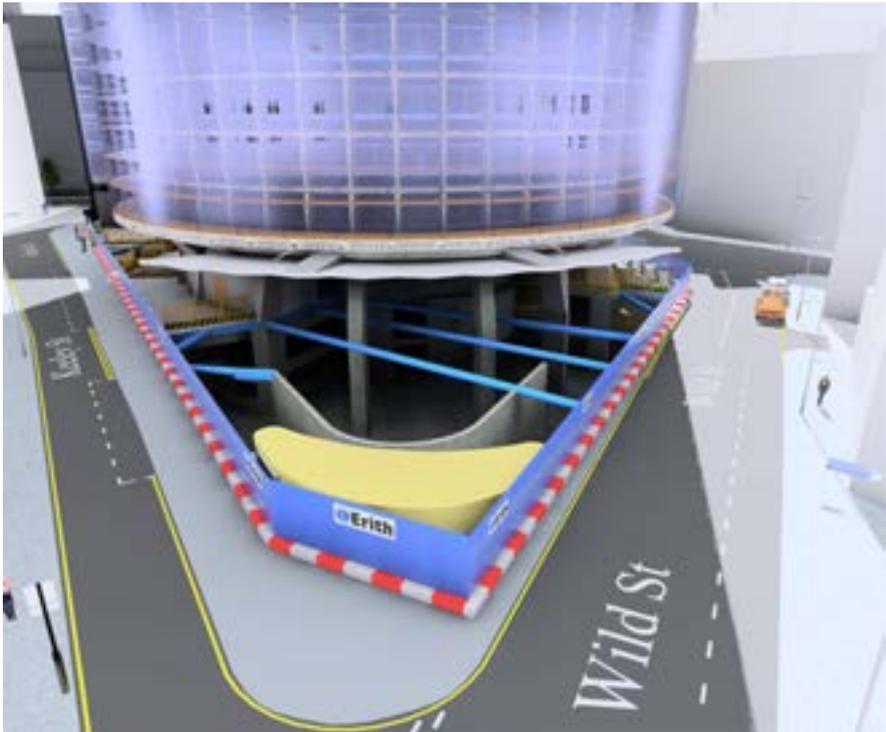


**Figure 50 - Propping layout to allow the demolition of the ground floor**

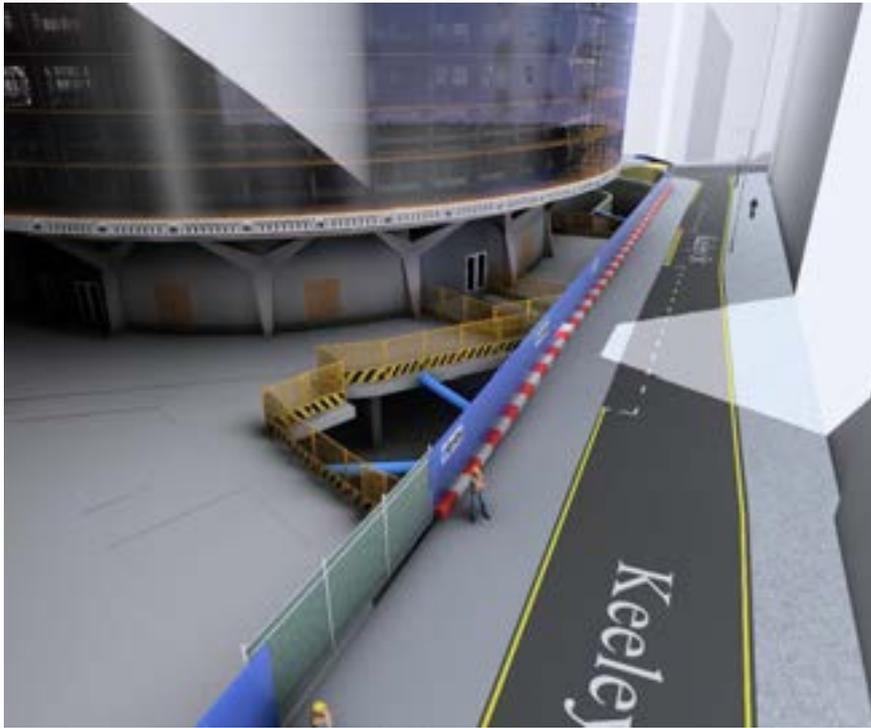
In addition to the above Temporary Works, to facilitate the demolition of sections of the basement as per figures 47 - 49, ECL will be required to provide the retained structures with stability via the installation of walers and props as per the figure below. The site Tower Crane will be assisting with the lifting of the steel elements into the position of the installation. The below figure also highlights the temporary propping required for the respective Ground Floor and Demolition works to the Kingsway building.



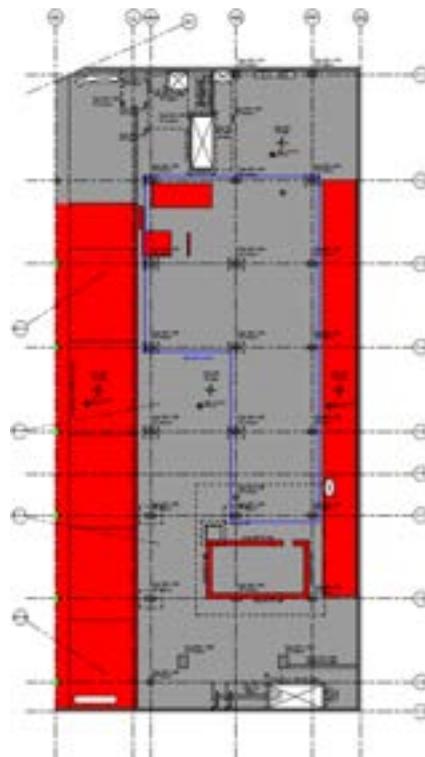
**Figure 51 - Propping and Waler Beam locations to Tower and Kingsway Building**



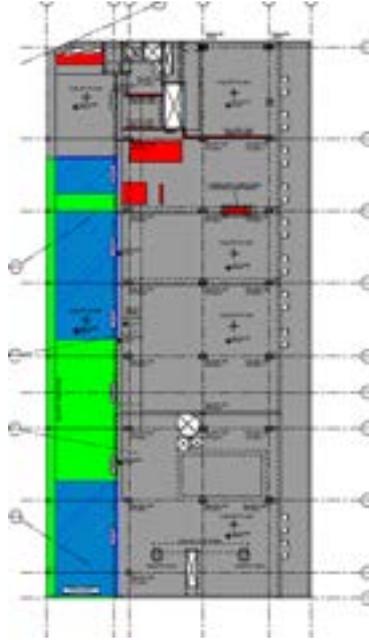
**Figure 52 - Basement temporary works installed - 3D perspective**



**Figure 53 - Basement Temporary Works at Keely Street elevation**



**Figure 54 - Basement Slab level 1 openings at Kingsway building**



**Figure 55 - Ground Floor demolition works at Kingsway building**

For the demolition works of the ground floor and basement at the Kingsway building, ECL will utilise the same plant and techniques as per the Tower ground floor and basement slab demolition works. For further analysis on the required Temporary works for this element of works please refer to Appendix B – Swanton Engineering Assessment.

#### **General control measures during the demolition operations**

Throughout the works Erith will operate to strict demolition guidance and its demolition standard operating procedures. The demolition procedures and guidance are listed below:

- The demolition will be under the control of the Erith demolition top man supervisor. He will be in direct contact with the operator of the demolition excavator via 2-way radio. In attendance will be a second excavator fitted with either bucket / grapple to sort and load the materials generated by demolition.
- During the damping down of the dust, operatives will be positioned in a manner as not to put them at risk. The excavator banks man will carry out this activity and he will stand to the side of the excavator within the view of the operator and at a safe distance from the excavator.
- During this phase of works only authorised Erith Operatives/ staff will have access to the site. Any access required by others requires to be escorted by a member of the Erith site project team.
- The excavators or Brokks will remove any loose debris before operatives enter the demolition zone.

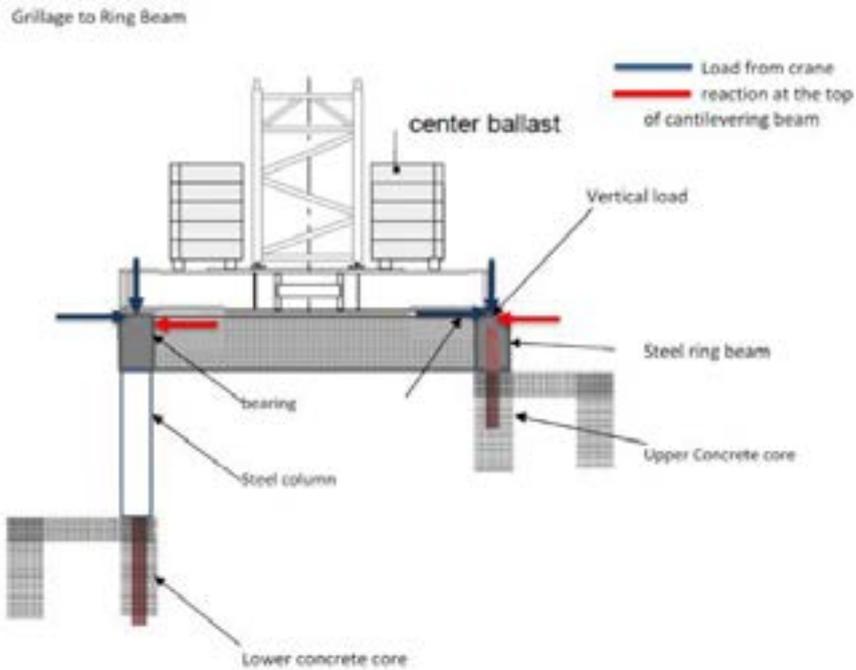
---

All above demolition works will be carried out in accordance with the following publications/documents:

- B.S. 6187: Code of Practice for Demolition 2011.
- Health and Safety at Work etc. Act 1974.
- Personal Protective Equipment Regulations 2002
- Provision and Use of Work Equipment Regulations 1998
- RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
- Construction (Design & Management) Regulations 2015
- Control of Substances Hazardous to Health 2002.
- Controlling of Noise at Work Regulations 2005.
- Controlling of Vibration at Work Regulations 2005.
- Control of Asbestos Regulations 2012
- TG20:13 Good Practice Guidance for Tube and Fitting Scaffolding
- SG4:10 Preventing Falls in Scaffolding
- Environmental Protection Act 1990

### **Crane Strategy**

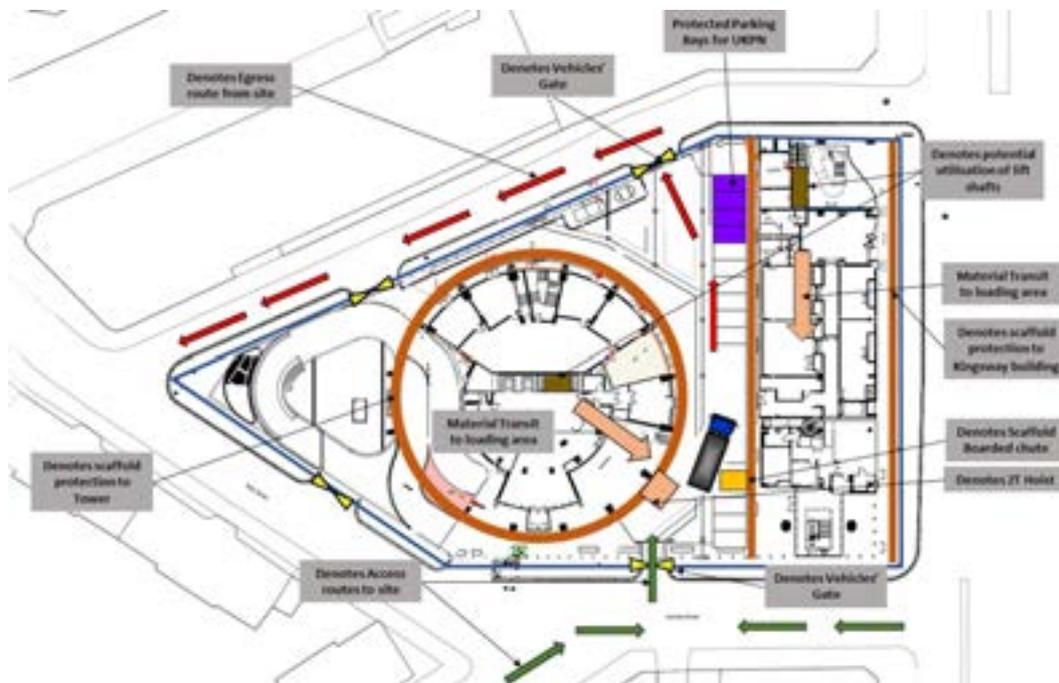
- In order to lift down the façade elements it is proposed to utilise a tower crane sat on the structural core in the centre of Kingsway tower. A steel grillage is designed to transfer the load from the ballasted tower crane base into the core of the building. The ballast in the tower crane prevents uplift and provide resistance to overturning forces from operation of the crane. The steel ring beam transfers the resultant vertical and horizontal forces into the walls of the core of the building. Finite element analysis is used to model the behaviour of the steel ring beam and the building core in order to design suitable fixings. It is possible to allow for difference in levels of the concrete within the core of the building as shown in the figure below.



• **Figure 56 - Tower Crane grillage**

- As per our logistics plans, ECL propose to utilise Luffing jib Tower Crane. The crane will have 11T capacity at a radius of 40m and therefore it is deemed sufficient for our works. In addition to that, site specific lifting plans will be produced which will highlight the section of the works that the Tower Crane will be utilised for.

## 7. Site Plan



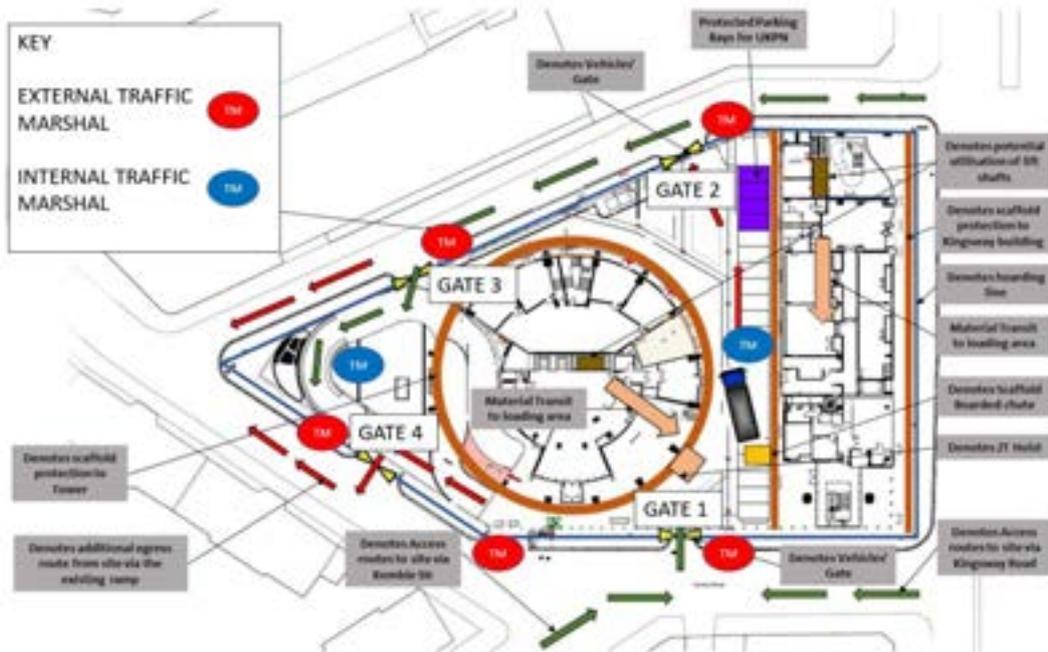
**Figure 14 – Site Plan**

## 8. Vehicle access and egress routes with consideration of local sensitive receptors

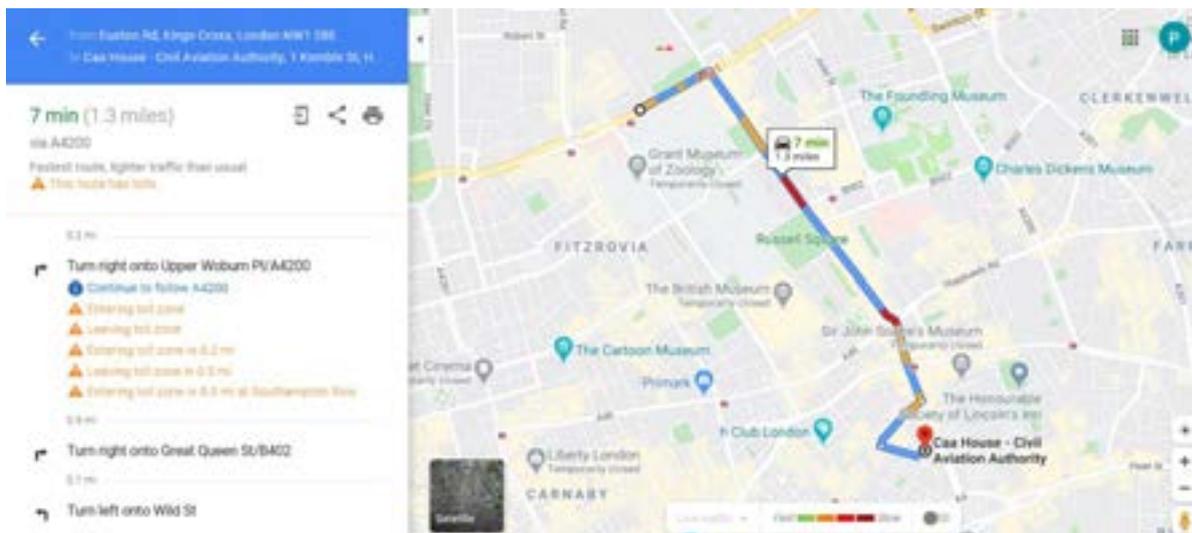
All vehicles attending site will be required to access site immediately and switch off their engines. No vehicles will be allowed to wait on the local streets in the vicinity of the site.

If any abnormal loads are required to service, the project which fall under a Metropolitan Police movement order the times of the movement will be advised to the highways and Environmental protection team at Camden City Council.

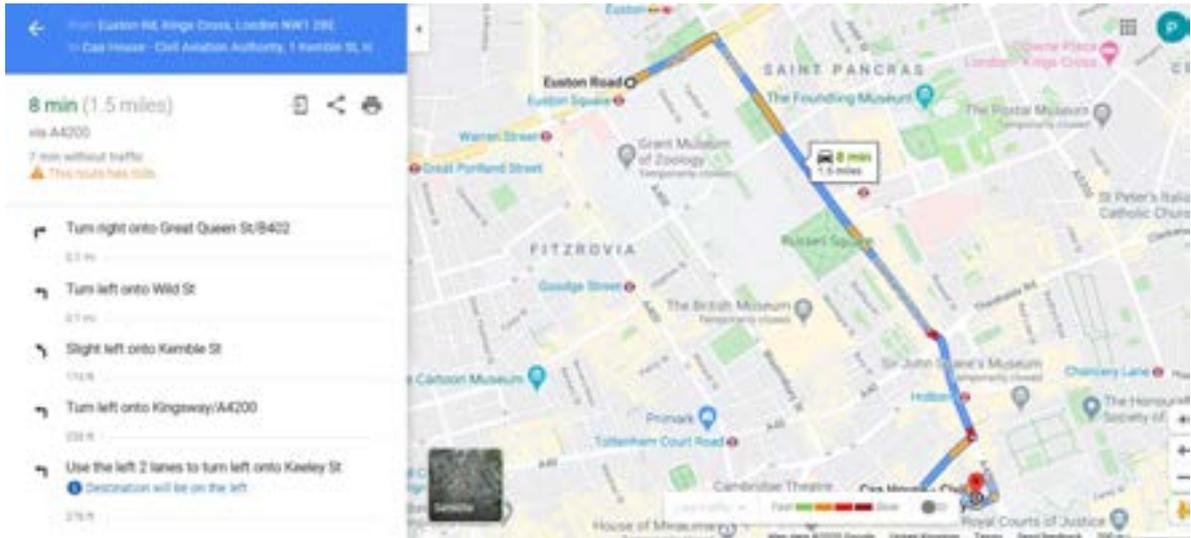
### Access and Egress Gates



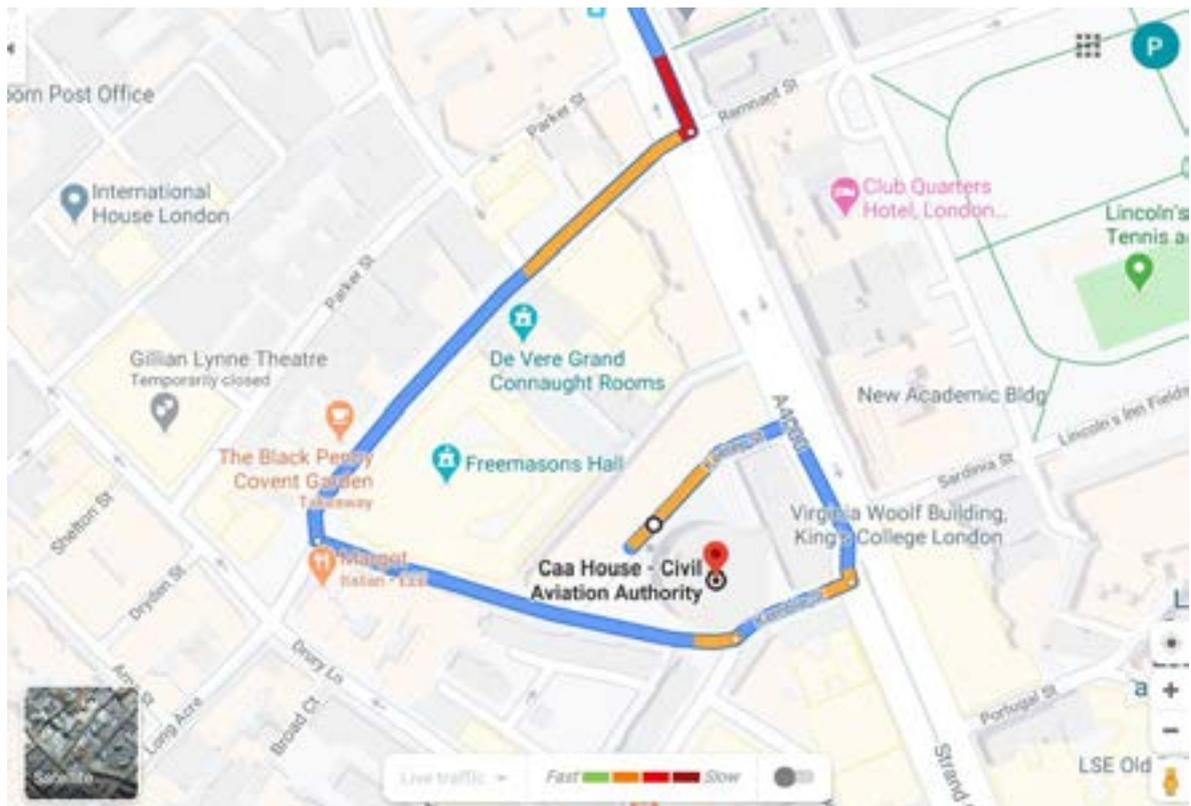
### Proposed Vehicle Routes to and from Site



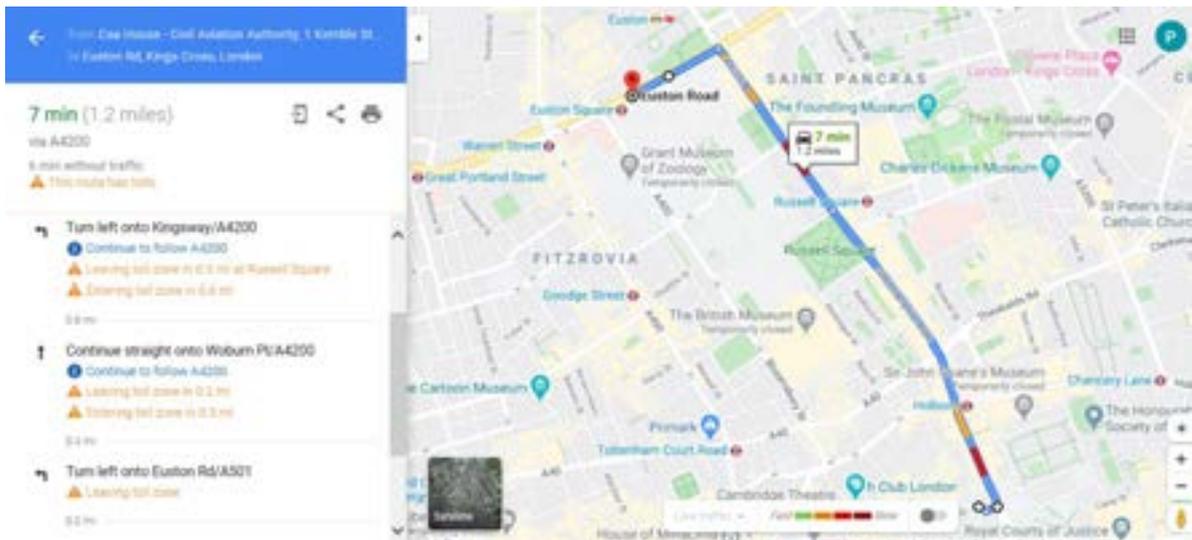
Primary vehicle access route to Gate 1 (Via A501)



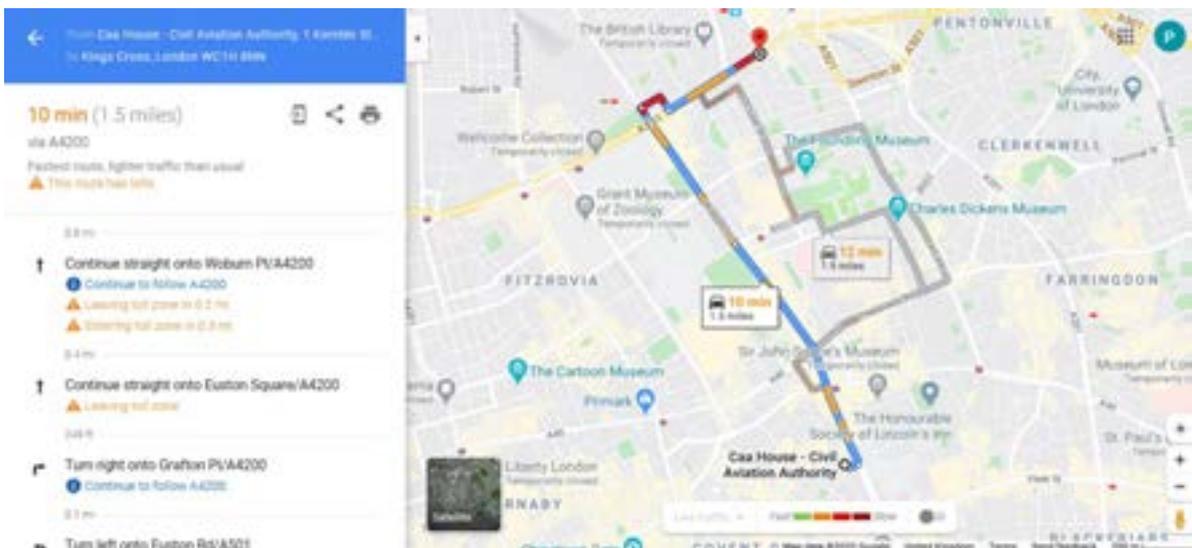
Primary vehicle access route to Gate 3 (Via A501)



Primary vehicles access route to Gate 3 (Via A501)



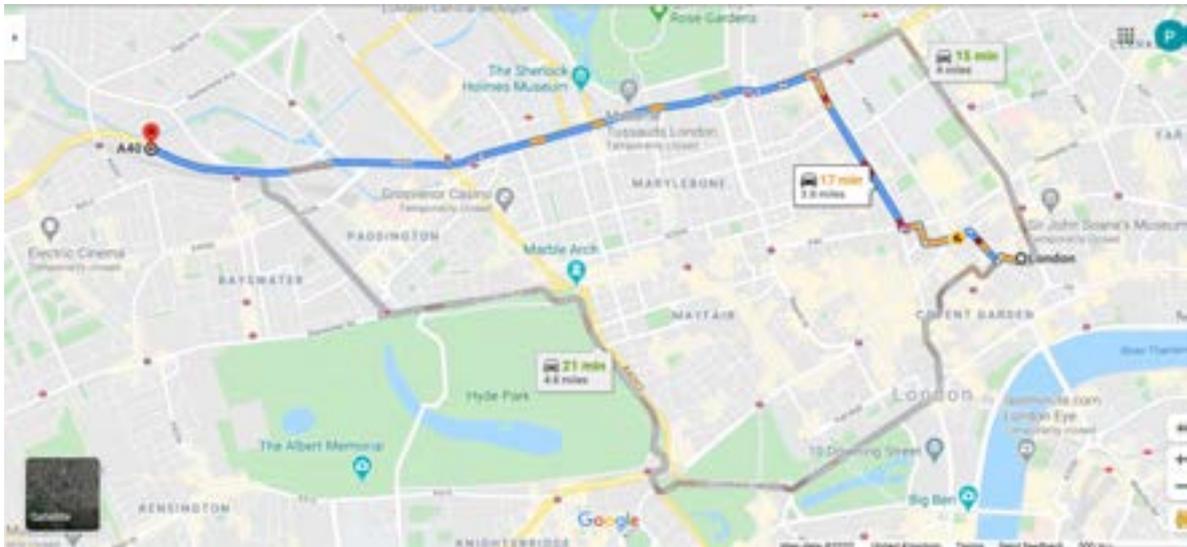
**Primary Egress Route from Gate 1 – A501 (West Bound)**



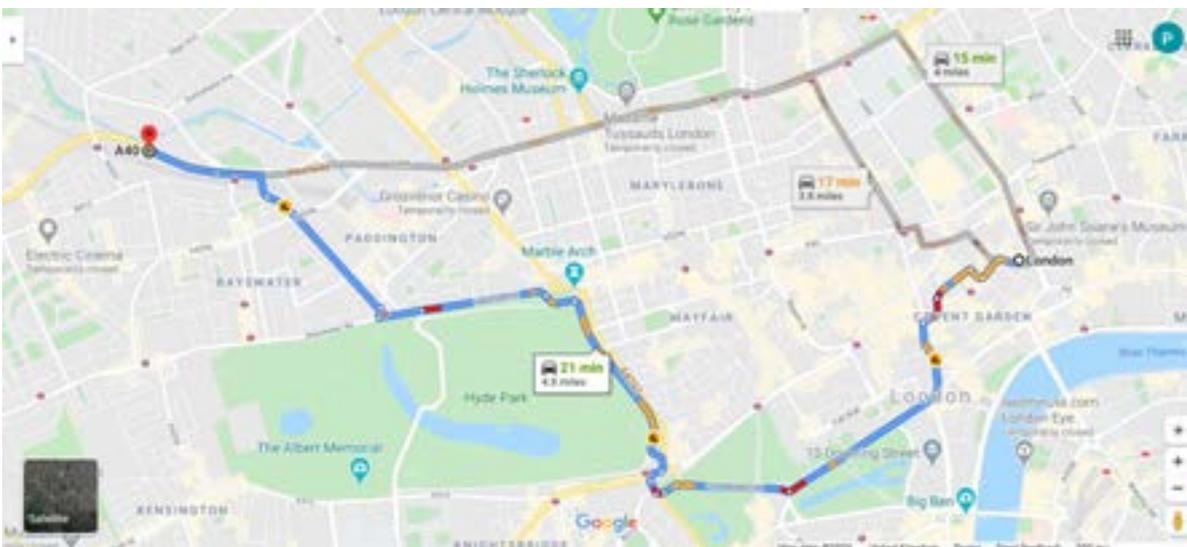
**Primary Egress Route from Gate 1 – A501 (East Bound)**

**Vehicle access to site alternative routes:**

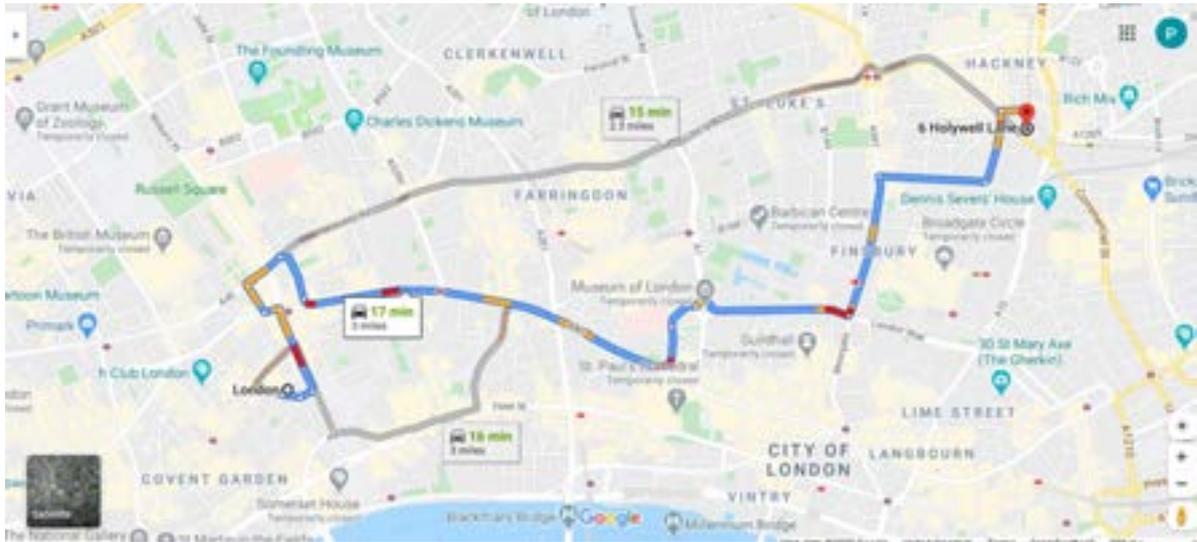
These are only to be used in the event of an abnormal load attending site or as direct by metropolitan police movement order. Routes can also be used in the event of highway works affecting primary route1.



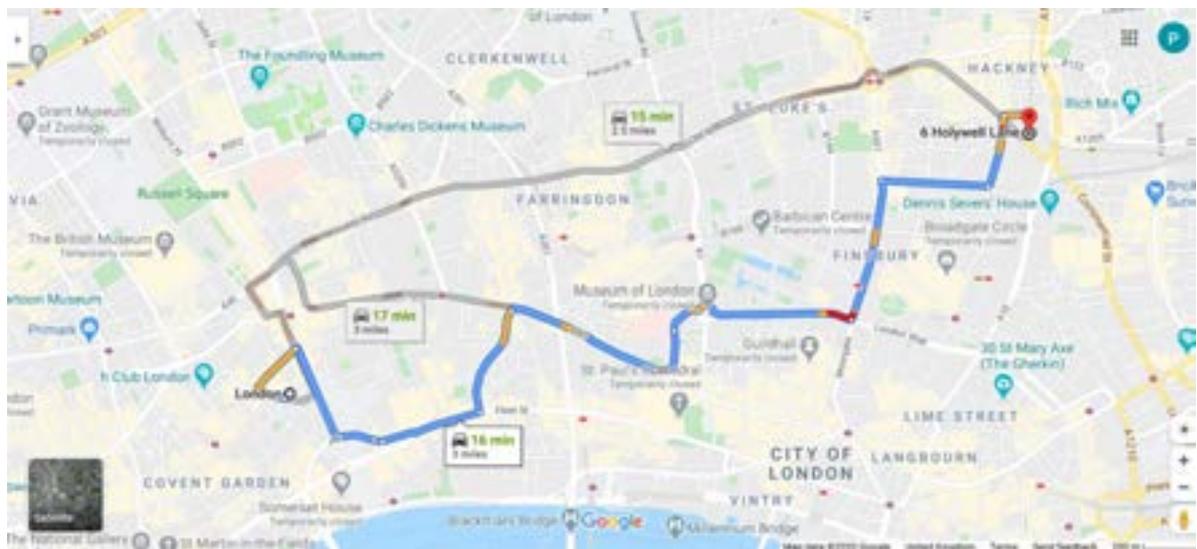
**Alternative Access/Egress Routes - (West Bound)**



**Alternative Access/Egress Routes - (West Bound)**



**Alternative Access/Egress Routes - (East Bound)**

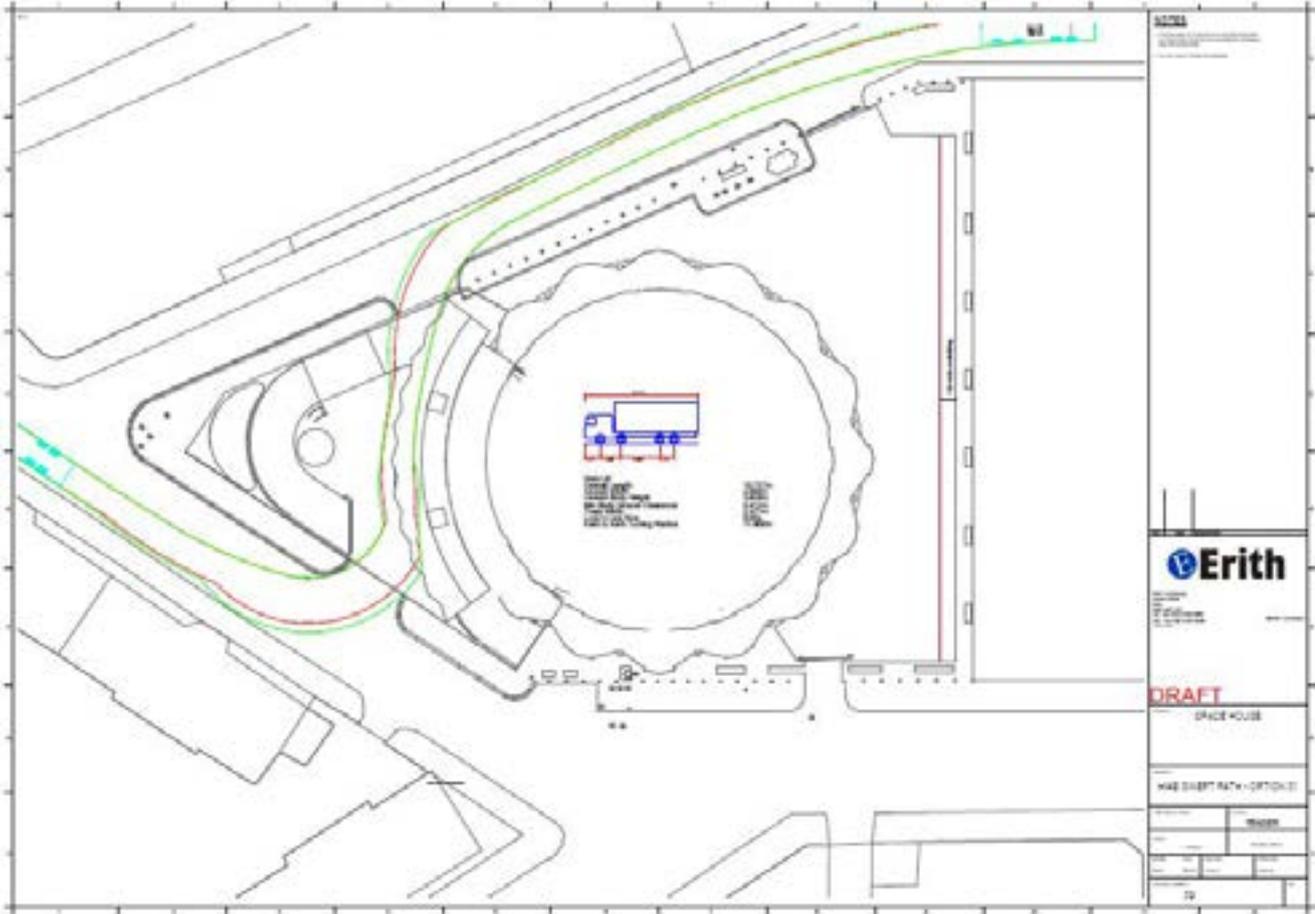


**Alternative Access/Egress Routes - (East Bound)**

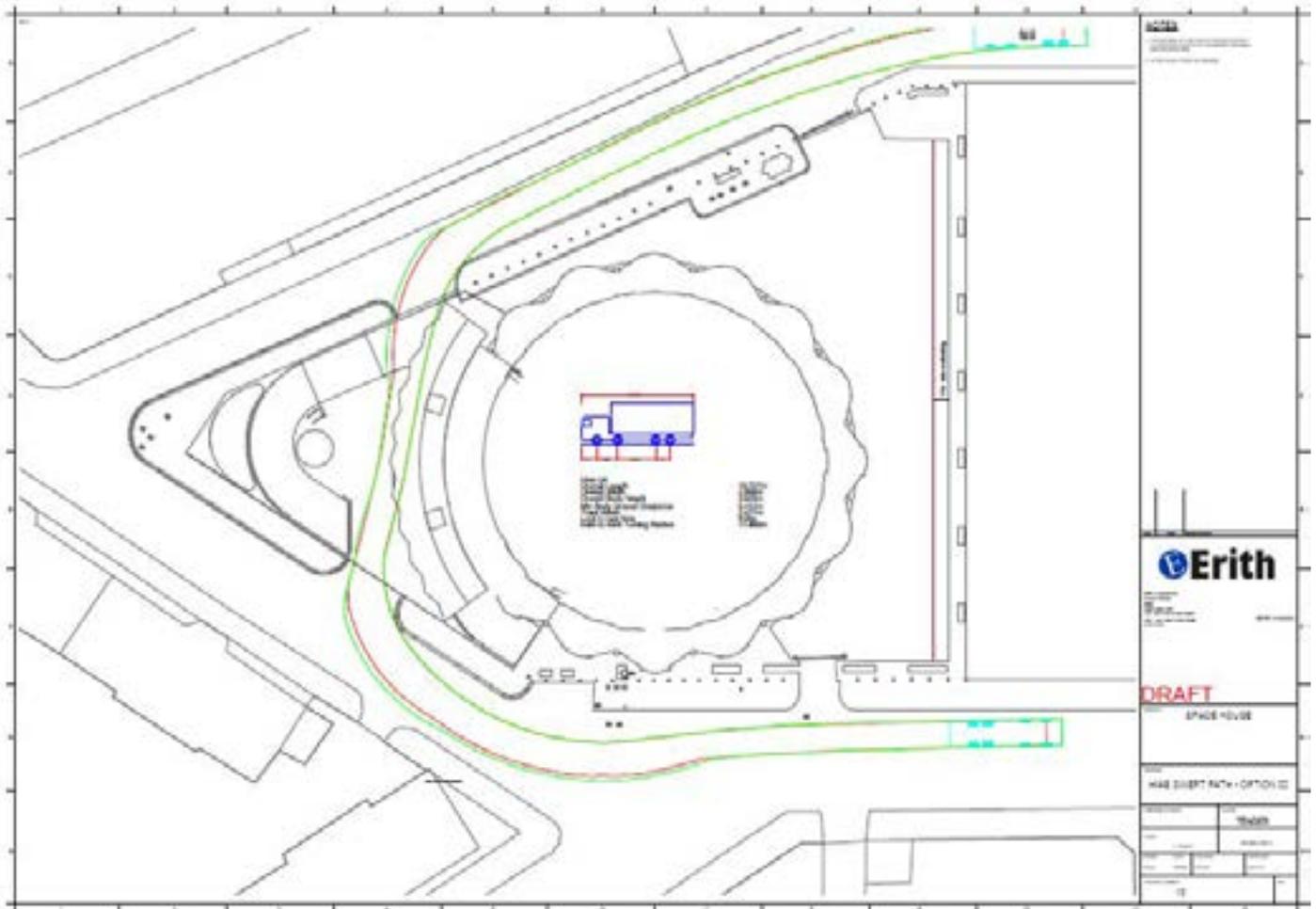
## Swept Path Analysis

Swept path analysis for vehicle access and egress have been completed. They can be seen below.

Swept Path – Hiab  
10.7m



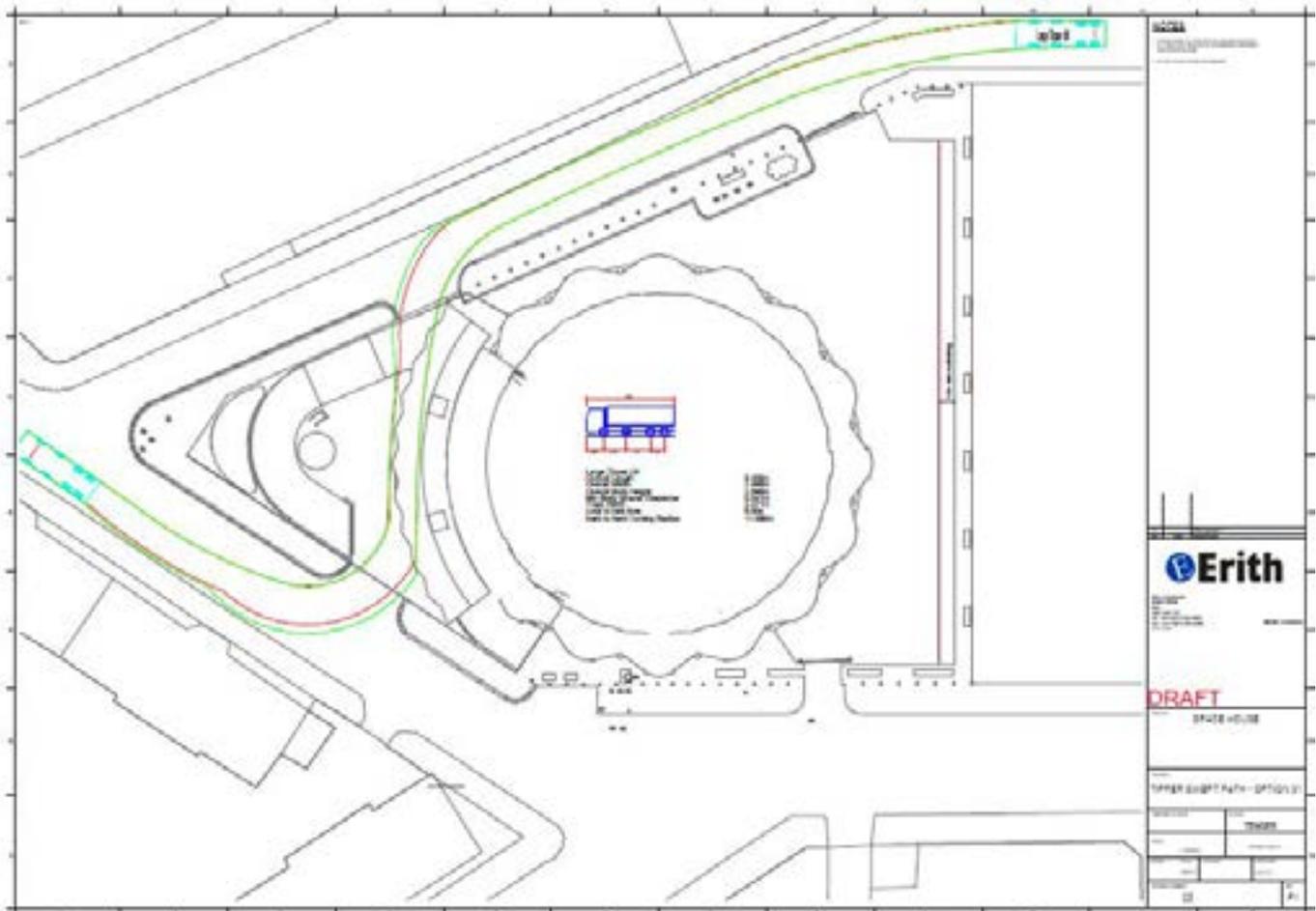
Swept Path – Hiab  
10.7m



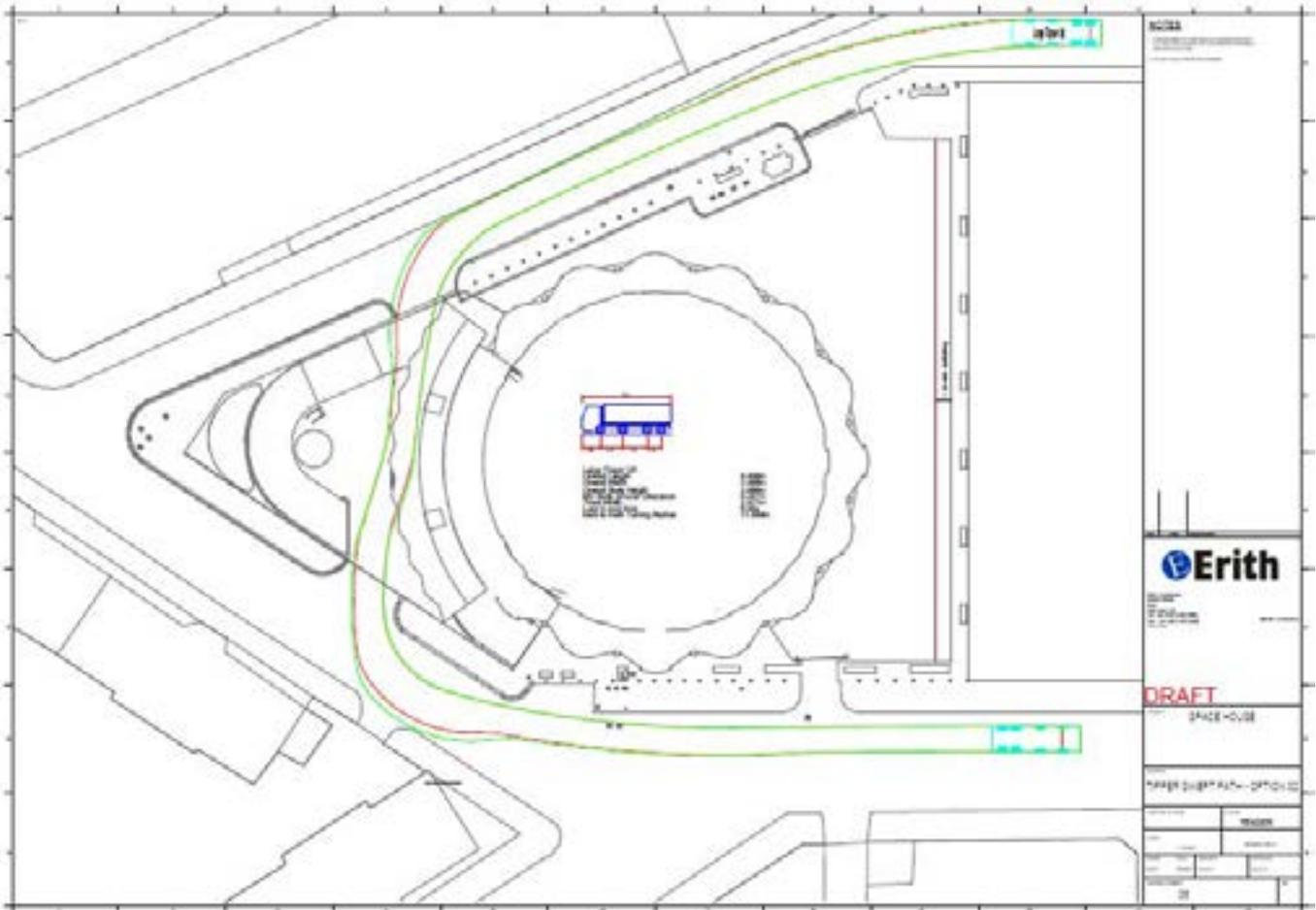




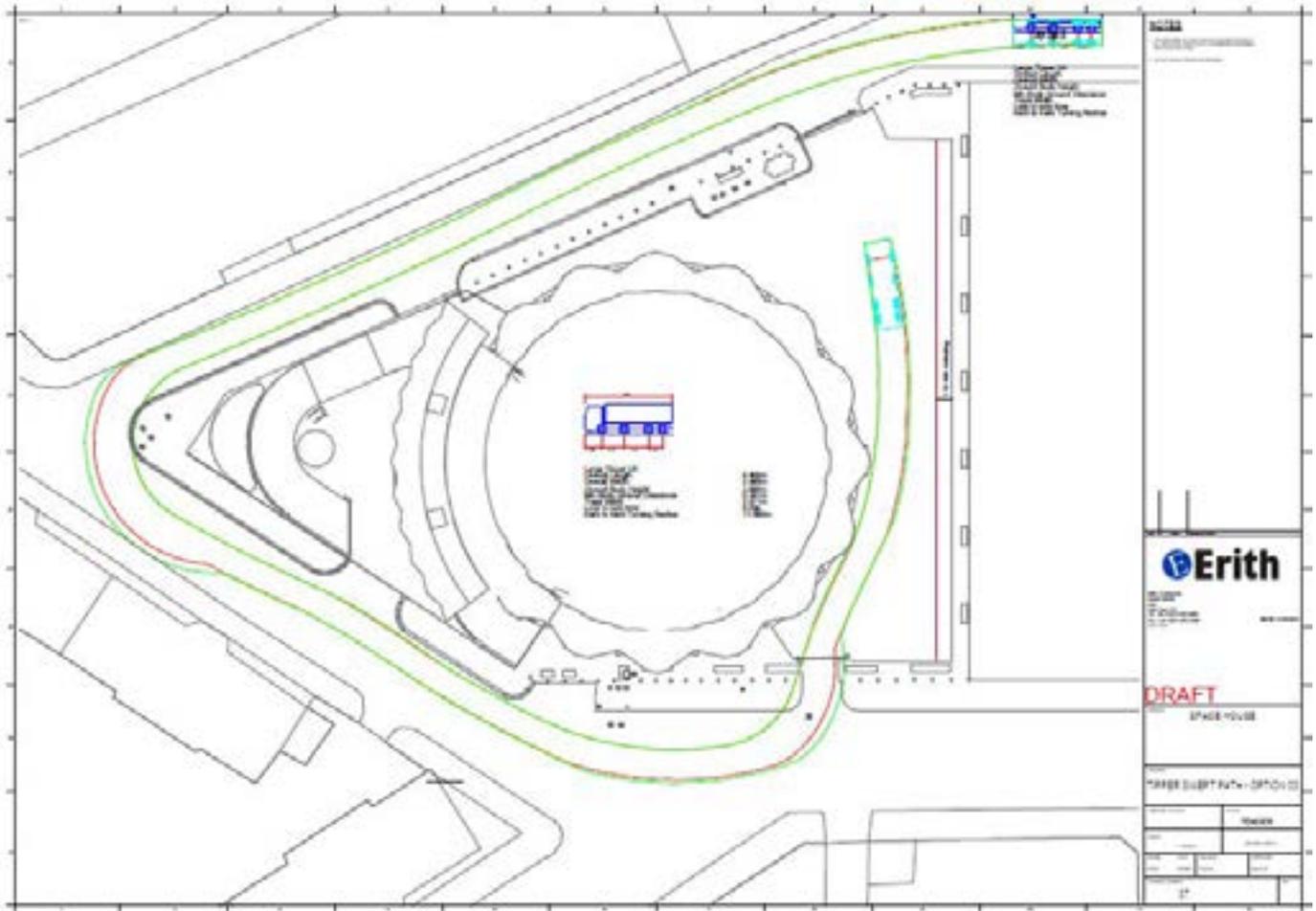
Swept Path – 8 Wheel Tipper  
8.4m



Swept Path – 8 Wheel Tipper  
8.4m

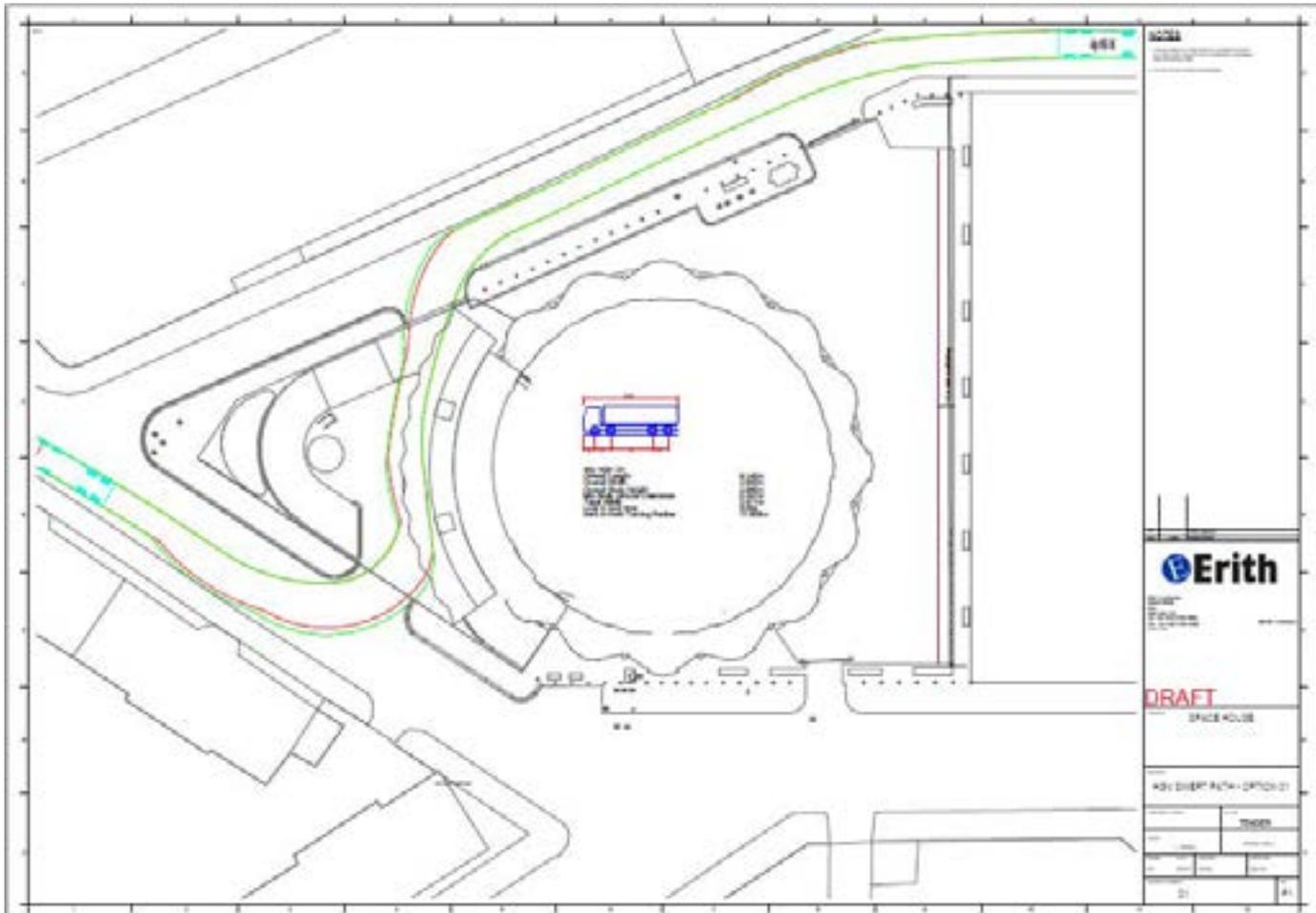


Swept Path – 8 Wheel Tipper  
8.4m

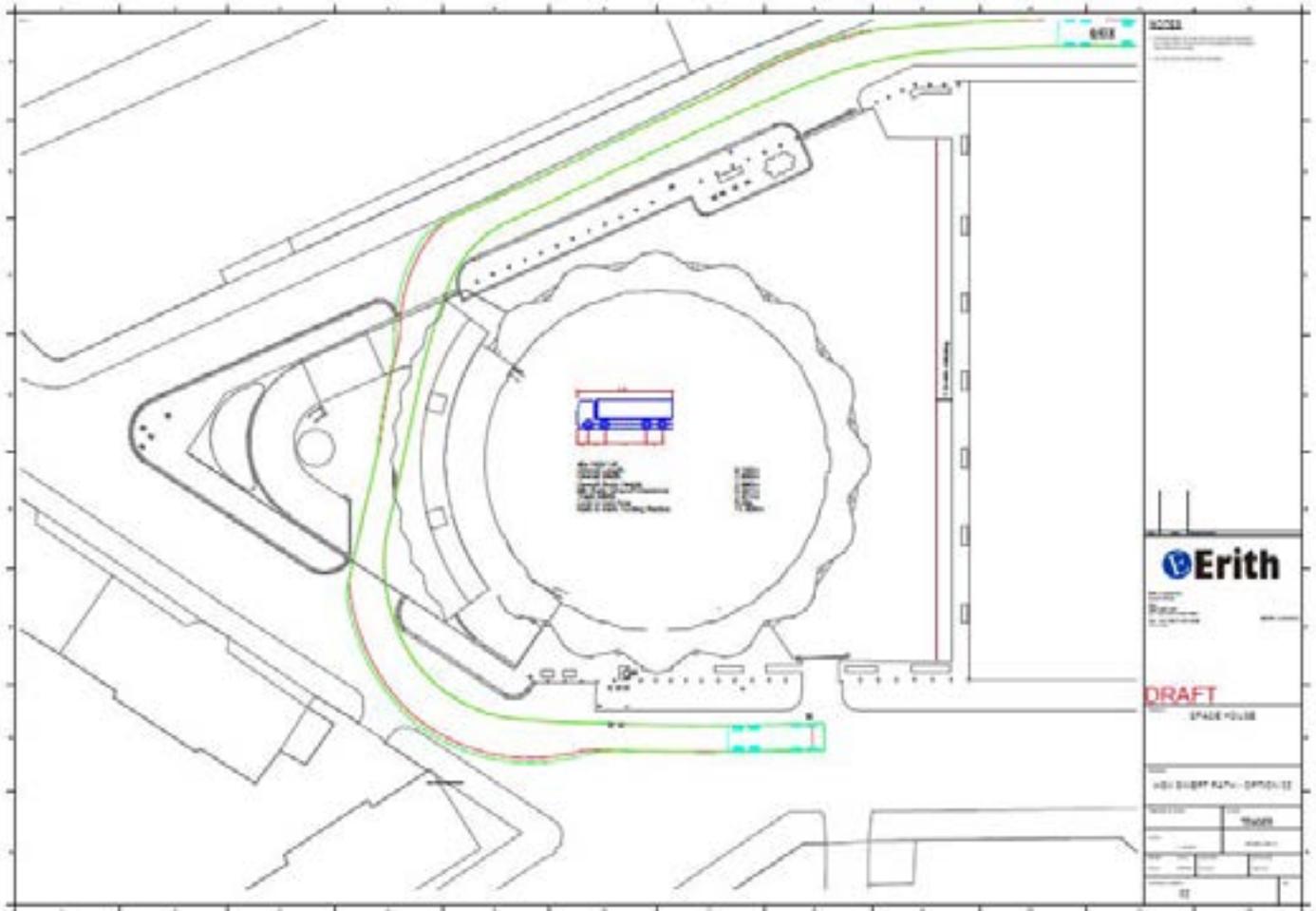




Swept Path – 40-yard HGV  
9.1m

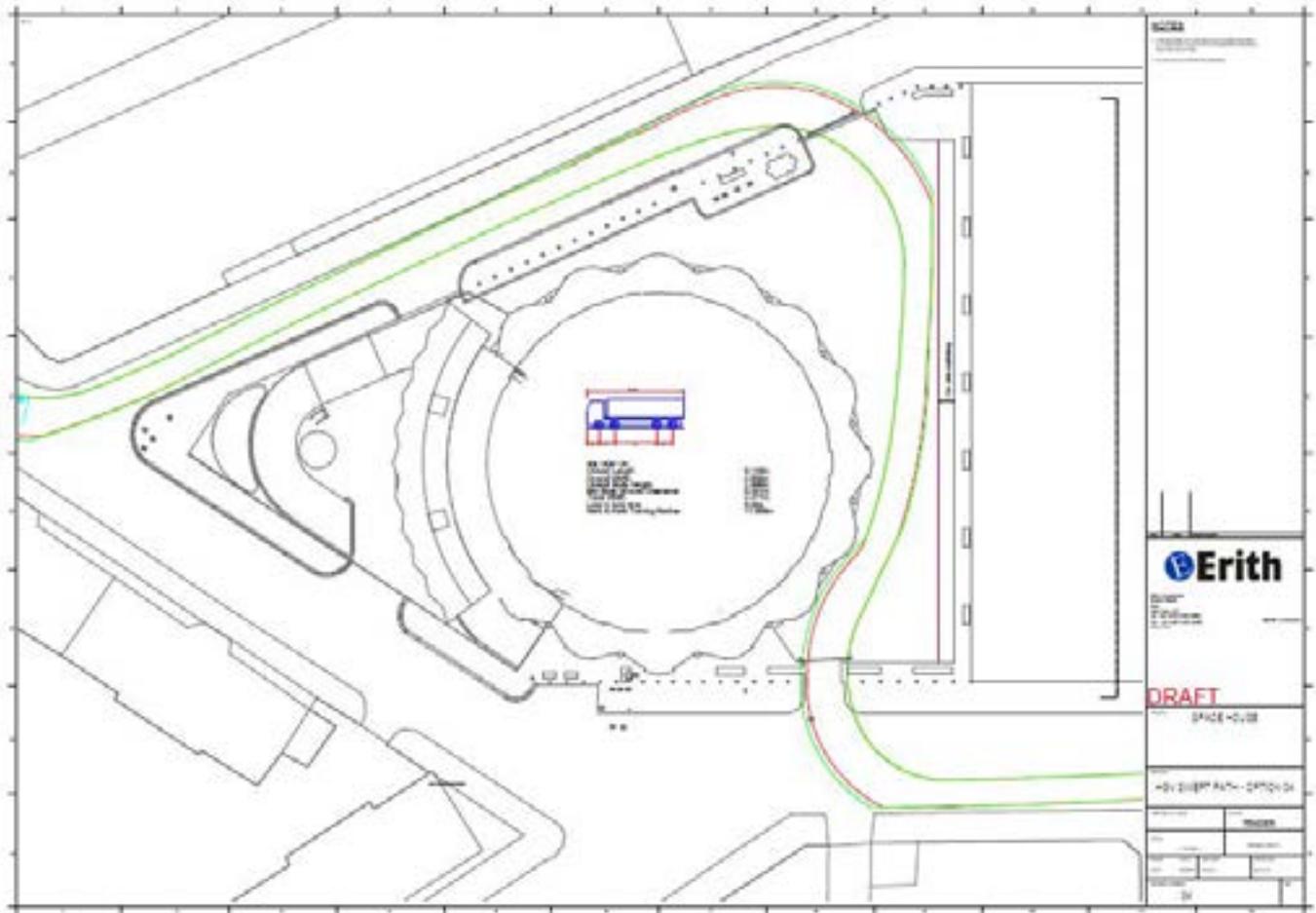


Swept Path – 40-yard HGV  
9.1m

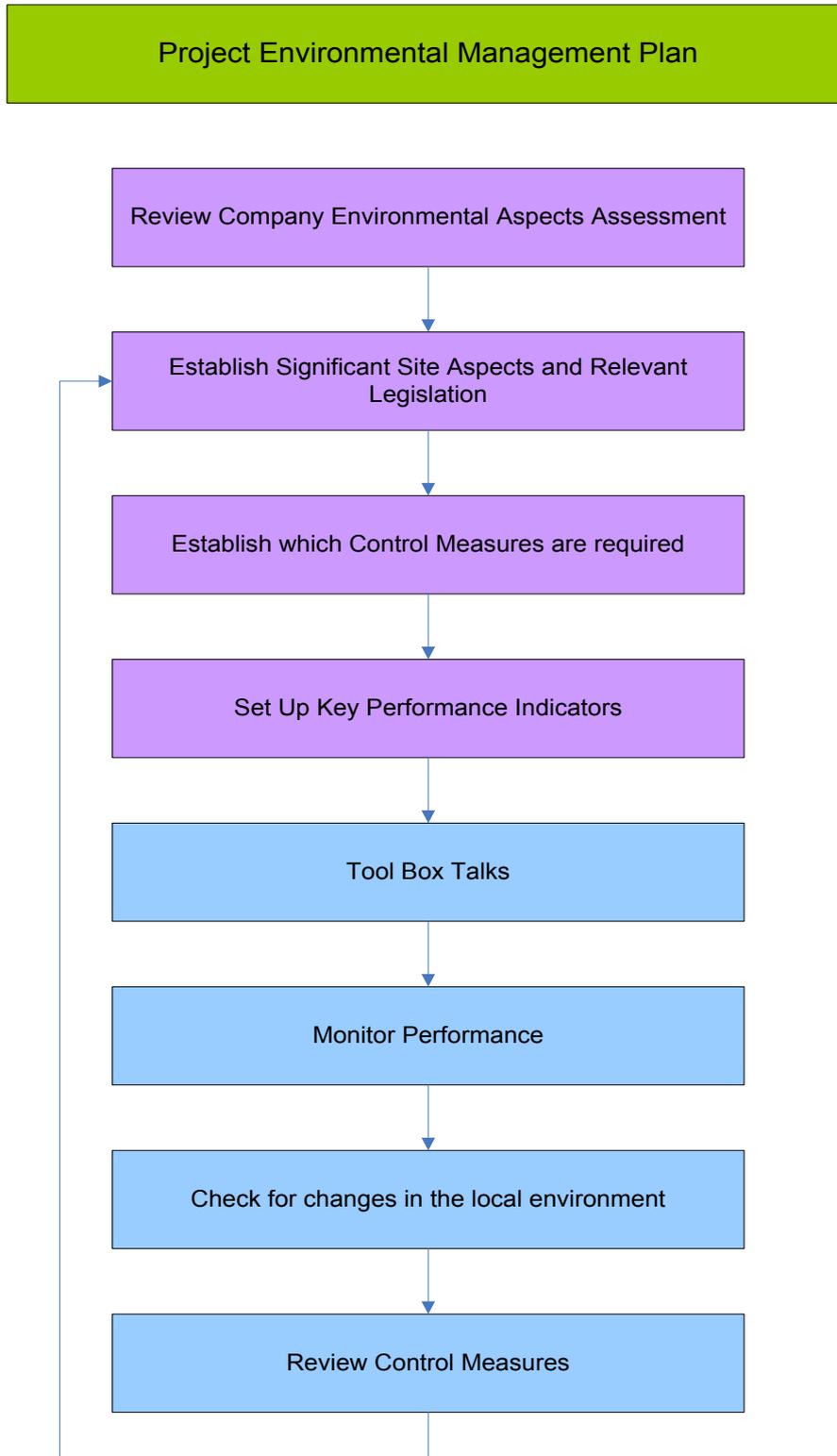




Swept Path – 40-yard HGV  
9.1m



## 9. Environmental Management Structure



Aspect	1	2	3	4	5	6	7	8	9	10	
	Is it affected by environmental legislation?	Is there a potential liability for past, present or future?	Does it represent an environmental risk?	Does it use significant resources (energy/water/raw materials)?	Does it have an impact on ecological/landscape issues?	Does it produce large amounts of waste material?	Is it an important issue for our customers/clients?	Have we received/are we likely to receive complaints?	Is it a key issue for our other stakeholders?	Is it a media environmental issue?	TOTAL out of 10
Waste Management	1	1	1	1	1	1	1	1	1	1	10
Water Discharges	1	1	1	1	1	1	1	1	1	1	10
Air Emissions (dust and odours)	1	1	1	1	1	0	1	1	1	1	9
Storage and Handling of Materials/Spillage Management	1	1	1	0	1	1	1	1	1	1	9
Ecosystems/Including Wildlife	1	1	1	0	1	1	1	1	1	1	9
Noise and Vibration	1	1	1	0	1	0	1	1	1	1	8
Service Suppliers, Sub-Contractors and Customers	0	1	0	1	1	0	1	1	1	1	7
Employee Induction and EMS Awareness	1	1	1	0	1	0	1	1	1	0	7
Traffic and Pedestrian Management	1	1	0	1	0	0	1	1	1	1	7
Neighbours	1	1	0	0	1	0	1	1	1	1	7
Landscaping & Visual Impact	0	1	0	0	0	0	1	0	1	1	4
Energy Management	1	0	0	0	0	0	1	1	1	0	4
Archaeology, Historical and Conservation	1	1	0	0	0	0	1	0	0	0	3
Office Environment	0	0	0	1	0	0	1	0	1	0	3
Site Security	1	0	0	0	0	0	1	0	0	0	2
7 - 10 High Significance		4 – 6 Moderate Significance				0 – 3 Low Significance					

All other Acts, Regulations and Codes of Practice relating to the works will be observed.

---

SIGNIFICANT ASPECTS
Waste Management
Water Discharges
Air Emissions (dust and odours)
Storage and Handling of Materials Spillage Management
Ecosystems/Including Wildlife
Noise and Vibration
Service Suppliers, Sub-contractors and Customers
Employee Induction and EMS Awareness
Traffic and Pedestrian Management
Neighbours
Landscaping & Visual Impact
Energy Management
Archaeology, Historical and Conservation
Office Environment
Site Security

---

<b>WASTE MANAGEMENT</b>
<p><b>SOURCE</b> Demolition activities Crushing Reuse Disposal</p>
<p><b>CONTROL MEASURES</b> Utilisation of Site Waste Management Plan and Material Management Plan, use of mobile plant Part B for crushing</p>
<p><b>TOOLBOX TALKS</b> Waste management Pollution control Pollution prevention guidelines – PPG6 e.g. Duty of care</p>
<p><b>KEY PERFORMANCE INDICATORS</b> Consignment notes, transfer notes, carriers registration, disposal permits, duty of care and audits.</p>
<p><b>PERFORMANCE MONITORING</b> Public Register checks on carriers, permits, licenses and exemptions. Producers Waste classification and EWC. Legal compliance with the duty of care regulations. K.P.I's</p>
<p><b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation</p>

<b>WATER DISCHARGES</b>
<p><b>SOURCES</b> Surface Water quality and drainage Dust suppression, stockpiles of loose materials. Spread from accumulation of contaminated materials (including water). Impact from fuel or oil spills.</p>
<p><b>CONTROL MEASURES</b> Discharge of surface water to drains will be passed through a silt trap or appropriately sized grills on drains, drain plugs and or Sand bag No discharges to controlled or surface waters will be allowed. All fuel storage will be banded, use of spill kits and drip trays at all times. Staff trained in emergency response planning in the event of a fuel leak or spill.</p>
<p><b>KEY PERFORMANCE INDICATORS</b> Visually monitor and record discharged water</p>
<p><b>PERFORMANCE MONITORING</b> KPI</p>
<p><b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation</p>

<b>AIR QUALITY / EMISSIONS</b> Dust, Odours Ozone Depleting Substances
<b>SOURCES</b> Demolition works, Plant Movements. Wind, Excavation. Exhaust from plant and lorries. Air Conditioning Equipment, Gas Bottles & Refrigerants.
<b>CONTROL MEASURES</b> Base line Measuring and regular Monitoring. Minimise unnecessary handling of material. HGV's will be sheeted when carrying loose materials off site. Use water sprays during dry / windy weather. Keep site speed limits low to reduce airborne dust. Utile enclosed covering for dusty containers during loading and transportation. Fence areas at the perimeter or around dust sources as appropriate. Seed surfaces of any mounds that need to be left on site prior to use.
<b>KEY PERFORMANCE INDICATORS</b> Visually Monitor and Record
<b>TOOLBOX TALKS</b> Pollution control. Housekeeping.
<b>PERFORMANCE MONITORING</b> Check complaints and recorded levels Internal Audits K.P.I's
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation

<b>STORAGE AND HANDLING OF MATERIALS</b> <b>SPILLAGE MANAGEMENT</b>
<b>SOURCES</b> Wastewater. Oils, Diesel, Chemicals. Skips.
<b>CONTROL MEASURES</b> Diesel to be stored in double bunded tanks. Store all other material in labelled containers and secure store area. Use of drip trays and spill kits at all times.
<b>KEY PERFORMANCE INDICATORS</b> Reported spillages
<b>TOOLBOX TALKS</b> Pollution control. PPG1, PPG2, PPG26, PPG6. PPG8 COSHH. LPG and other compressed gases.
<b>PERFORMANCE MONITORING</b> K.P.I's Incident response reports.
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation

<b>ECOSYSTEMS/Including Wildlife</b>
<b>SOURCES</b> Mammals, Reptiles, Birds, Amphibians & their habitats. Noise and Vibration from demolition works
<p style="text-align: center;"><b>CONTROL MEASURES</b></p> <p>Avoidance of visually intrusive and noisy work during the bird overwintering period (October to March). Measures taken to ensure that line manager informed if any evidence of badgers near site. Protection of borrowdyke and drainage ditches will be incorporated within the mitigation measures undertaken in the surface water and contamination control. Clear method statements will be agreed with (1) and work supervised by suitably qualified personnel to ensure that the impacts are minimised. Specific measures could include the following. No use of explosives. Noisy and visually intrusive should be avoided during October to March to ensure there is no disturbance of over wintering birds. Prior to demolition and removal the buildings will be checked for the presence of bats by an appropriately qualified expert. found, consultation with Natural England would be undertaken to agree an appropriate mitigation plan. Toolbox talk on ecosystems- management and minimisation of disruption. Regular dust monitoring by area boundary. Regular visual inspections. Consultation with ecologist via client. Use of Ecology Calendars to advise and remind employees of their responsibly.</p>
<b>KEY PERFORMANCE INDICATORS</b> Lower dust deposits (through measuring) No use of explosive techniques as their use was excluded in the EIADR submission, and would constitute a change under Reg 13 Regular visual logging with picture evidence showing no disruption/pollution Compliance with mitigation measures
<b>TOOLBOX TALKS</b> Ecosystems Mammals, Reptiles, Birds, Amphibians & their habitats Pollution control – CITB GT700 No. 31.2 Pollution prevention guidelines – PPG 1, PPG2
<b>PERFORMANCE MONITORING</b> Induction Register Toolbox talk register Internal Audits
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation
<b>NOISE AND VIBRATION</b>
<b>SOURCES</b> Plant, equipment & demolition Specific work activities
<p style="text-align: center;"><b>CONTROL MEASURES</b></p> <p>Base line monitoring prior to commencement of works. All demolition activities to be in accordance with good practice as described in British Standard BS5228 Noise and Vibration Control on Construction and Open Sites. This includes minimising unnecessary revving of engines, turning off machines when not in use, routine maintenance of machinery, The use of equipment fitted with effective silencers/insulation. Appointed site contact to record, action and investigate complaints. Noise and vibration mitigation by distance and screening. Use of concrete crushers rather than pneumatic hammers. If piling is necessary jacked or bored piling techniques to be used in preference to pile driving.</p>
<b>TOOLBOX TALKS</b> Control of noise Vibration Good neighbours
<b>KEY PERFORMANCE INDICATORS</b> Record Noise and Vibration monitoring
<b>PERFORMANCE MONITORING</b> Check noise levels against base line levels Internal Audits
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation
<b>SERVICE SUPPLIERS, SUB-CONTRACTORS AND CUSTOMERS</b>
<b>SOURCES</b> Service Suppliers Sub-contractors

Customers Temporary Accommodation
<p><b>CONTROL MEASURES</b>  Induction including incident response plan.  Use of approved suppliers and sub-contractors.  The use of unlicensed sites for accommodation is prohibited by Erith Contractors Ltd.</p>
<p><b>KEY PERFORMANCE INDICATORS</b>  Induction register</p>
<p><b>TOOLBOX TALKS</b>  Buried services – CITB GT700 No. 28  Sub-contractors duties</p>
<p><b>PERFORMANCE MONITORING</b>  Induction Register  Method Statement register  Internal Audits</p>
<p><b>RELEVANT LEGISLATION</b>  Refer to the Legal Register for current Legislation</p>

<b>EMPLOYEES INDUCTION AND EMS AWARENESS</b>
<p><b>SOURCE</b>  Contractor Employees  Subcontractors  Consultants  Client  Visitors</p>
<p><b>CONTROL MEASURES</b>  Induction &amp; Toolbox register.</p>
<p><b>KEY PERFORMANCE INDICATORS</b>  Completion of registers.</p>
<p><b>TOOLBOX TALKS</b>  Significant Aspects.  Incident Response Plan.  Ecology</p>
<p><b>PERFORMANCE MONITORING</b>  Check Induction Register  Toolbox talk Registers  Incident response reports</p>
<p><b>RELEVANT LEGISLATION</b>  Refer to the Legal Register for current Legislation</p>

**TRAFFIC AND PEDESTRIAN MANAGEMENT**

**CONTROL MEASURES**

Lorries  
Cars  
Site Traffic  
Pedestrians/Public  
Visitors

**CONTROL MEASURES**

Site set up, traffic and pedestrian routes where needed.  
Sheet all vehicles prior to leaving site to reduce dust emissions.  
Provision of recirculating wheel washing for vehicles leaving site.  
Employee awareness of public footpath and potential contact with the public.  
Use of transfer stations in close proximity to site to reduce mileage thereby saving on CO2 emissions.  
Site staff to car share where practicable.  
Limit HGV movements to the EIADR consented amount

**KEY PERFORMANCE INDICATORS**

Incidents reported

**TOOLBOX TALKS**

Mobile plant – CITB GT700 No. 22.2 (covers the banking of vehicles).  
Site transport - CITB GT700 No. 22.3 (covers the banking of vehicles).  
Housekeeping

**PERFORMANCE MONITORING**

K.P.I's  
Visual, Aural Inspections, Internal Audits

**RELEVANT LEGISLATION**

Refer to the Legal Register for current Legislation

<b>OFFICE ENVIRONMENT</b>
<b>SOURCES</b> Waste Energy
<b>CONTROL MEASURES</b> House keeping
<b>KEY PERFORMANCE INDICATORS</b> Visual monitoring
<b>TOOL BOX TALKS</b> CITB GT700 16 Welfare arrangements
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation

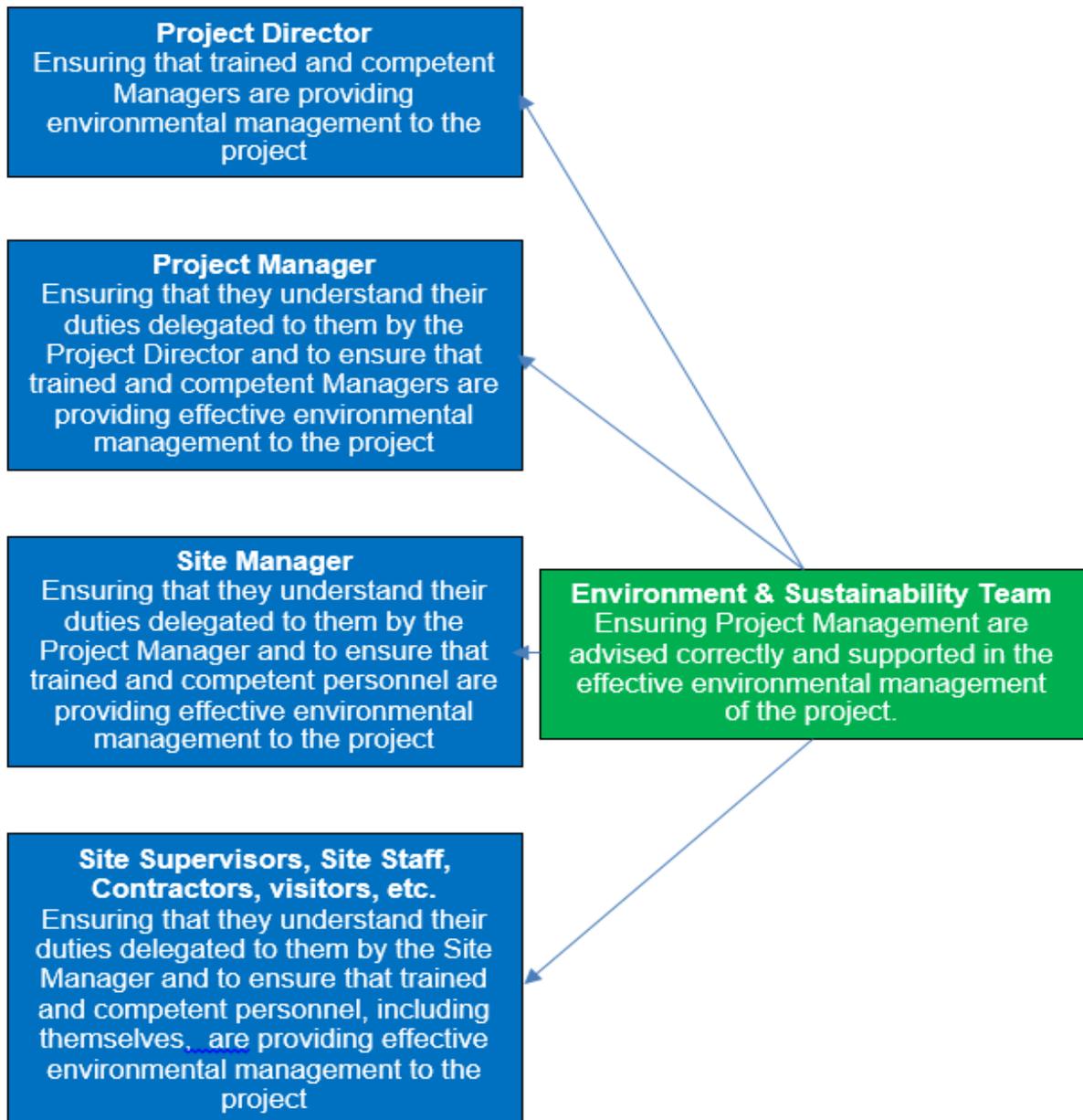
<b>ARCHAEOLOGY AND CULTURAL HERITAGE</b>
<b>SOURCES</b> Excavation
<b>CONTROL MEASURES</b> Access to site to be made available to archaeologists if required.
<b>KEY PERFORMANCE INDICATORS</b> Monitor through the Archaeological, Historical and conservation Areas section of the Significant Aspects Key performance Monitoring Checklist.
<b>TOOLBOX TALKS</b> None
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation

<b>SITE SECURITY</b>
<b>SOURCES</b> Unauthorised persons on site.
<b>CONTROL MEASURES</b> Ensure secure compound and regular monitoring.
<b>KEY PERFORMANCE INDICATORS</b> Security incidents
<b>TOOLBOX TALKS</b> Security on site – CITB GT700 No. 39 Emergency Response Plan for security
<b>PERFORMANCE MONITORING</b> Monitor security incidents
<b>RELEVANT LEGISLATION</b> Refer to the Legal Register for current Legislation

**Closing out Internal Audits**

The Project Manager and the Environment & Sustainability team will insure that any actions highlighted in our internal audits are closed out promptly.

10. **Roles and Responsibilities**



Erith person responsible for the management of implementation, management and review of the EMP:	Paul Millar – Erith Senior Project Manager
Erith person responsible for implementation, management and review of the EMP:	Sean Morris – Erith Site Manager
Erith Manager with overall responsibility for compliance with the EMP:	Scott Exell – Erith Operations Manager

---

## **11. Considerate Constructors Scheme**

The project will be registered with the Considerate Constructors Scheme and all personnel on site are to be made aware of its recommendations for behaviour.

## **12. Summary of Contract Works**

The works to be undertaken for the Space House Enabling Works Contract are summarised below;

- Preconstruction Services Period (PCSA)
  - Developing methodologies
  - Developing site logistics plan in tandem with the client and Camden
  - Liaison with Camden Council and Third Parties
  - Obtaining permits, licenses and consents
  - Identifying services
  - Engaging with services providers
  - Façade survey
  - Developing temporary works designs
  - Placing orders for plant and equipment such as the Tower Crane
  - Preparing and engaging with the local community through newsletters and workshops.
- Site establishment including welfare and hoarding.
- Mechanical and Electrical Surveys.
- Tagging and tracing services
- Protection to services such as the UKPN substation
- MEP disconnections and plant removal
- Installation of temporary electrics and services.
- Scaffold erection to encapsulate the works.
- Monitoring and surveying works
- Asbestos Removal works.
- Soft strip of all remaining non-structural items site wide to both structures
- Removal of Ground and 15<sup>th</sup> floor windows and glazing.
- Erection of Tower Crane
- Temporary Works installation to Precast façade panels
- Temporary Works to basement retaining walls
- Structural opening up works to basement (One Kemble Street Tower).
- Ground Floor demolition works to Kingsway House
- Clean and Clear Site

## **13. Public Access and Highways (Including Cycle Safety)**

All pedestrian and cycle routes will remain active for the duration of the project

## **14. Potential for River Transport/Removal of Spoil**

Due to the location of the site there is no potential for river transport/removal of spoil.

---

---

## **15. Routes for Construction Traffic and Traffic Management Arrangements**

All vehicles attending site will be required to access site immediately and switch off their engines. No vehicles will be allowed to wait on the local streets in the vicinity of the site.

If any abnormal loads are required to service, the project which fall under a Metropolitan Police movement order the times of the movement will be advised to the highways and Environmental protection team at Camden Council.

***Full vehicle access and egress route details can be found within section 7 of this document***

For the duration of the project there will be up to 30 vehicle movements per day if there is a higher quantity the relevant authorities will be notified. Traffic marshals will control vehicle movements on and off site and all vehicle movements will be performed outside peak traffic times.

- All vehicles shall use vehicle routes highlighted in the following logistics plans.
- All operatives shall use the established site pedestrian routes shown in logistics plan.
- All people entering and leaving the site will be required to log in and out at the site security post.
- Exclusion zones will be erected with controlled access/ egress to the work zone.

Erith will erect a site boundary hoarding compliant with the local borough's code of practice. Due to the logistical constraints of the site all loading and unloading will have to be completed within the site confines.

Any access and egress to and from the loading area will be controlled by dedicated traffic marshals, they shall control traffic and pedestrian movement on all boundaries of the site where necessary while 8 wheel rigid back HGVs, and 40-yard bins enter and exit the loading zones. Pedestrians will enter the site confines through a pedestrian access door in the site hoarding. This will provide access to a green routed area to the welfare located initially within the ground and 1<sup>st</sup> floor.

During the demolition and soft strip phase's, materials will be processed at the work face where possible and transported lifts, stairwells, hoist, and tower crane. Waiting 8-wheel rigid back HGVs will then be loaded by excavators. 40-yard segregated waste bins will be loaded by hand/excavators. All vehicles will then be directed back into public traffic by the site banksmen/traffic marshals.

Traffic routes will be maintained as per the agreed Traffic Management Plan for the duration of the works. Traffic marshals will control all vehicle arriving and leaving site. Once inside the loading areas, barriers will be placed around the vehicle to contain the waiting wagon/ skip will then be filled, a combination of roll on/off skips and tipper lorries will be used to remove the arisings from this location.

Materials will be transported through the building to ground/basement level via a combination lifts, stairwells, hoist and tower crane.

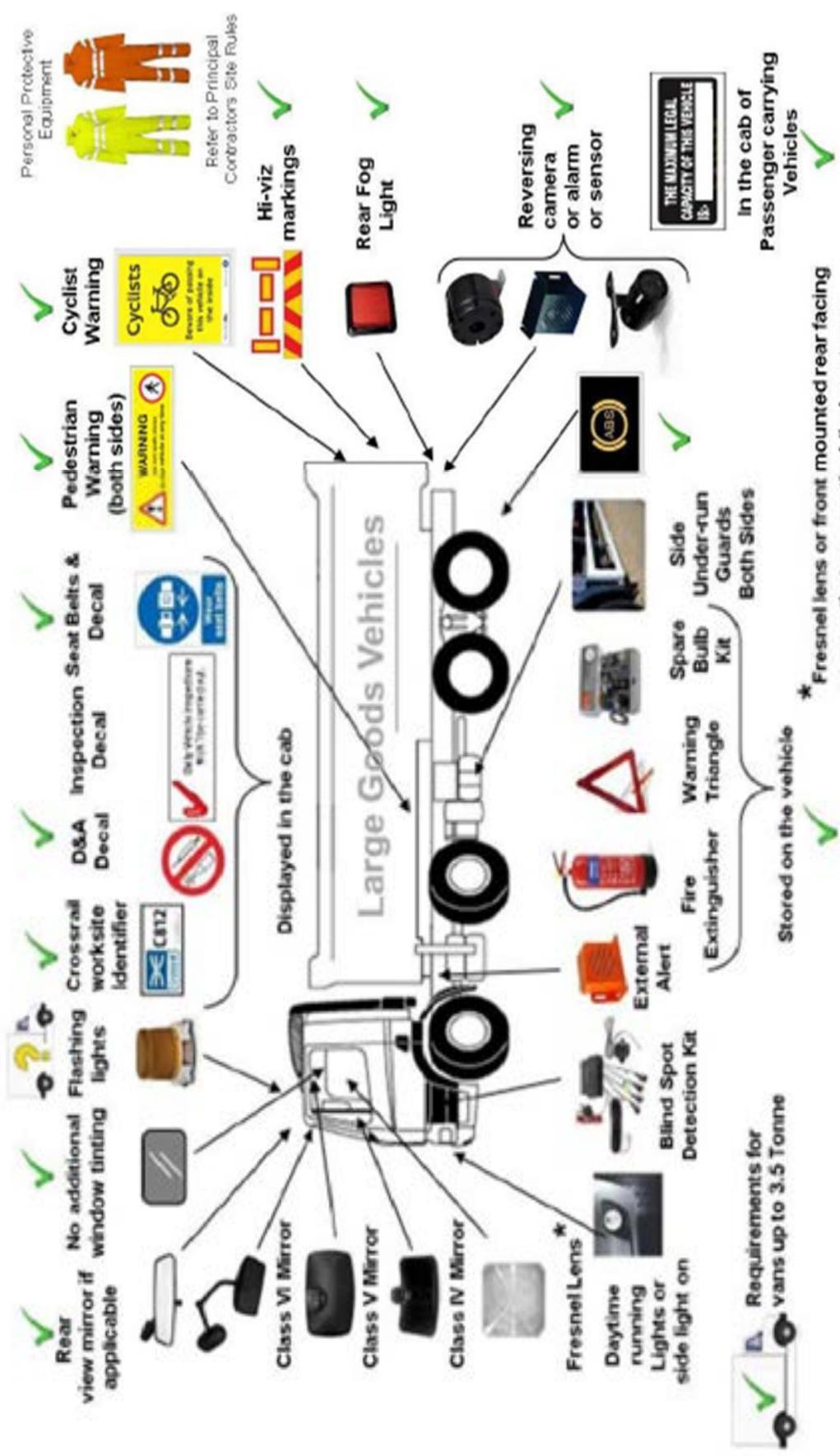
Any leading edges will have suitable edge protection to suit the works and operatives at upper levels will be in constant radio contact with those directing the works at ground floor. There will also be various pedestrian gates for access and emergency, the positions of these will be determined by fire and emergency plans.

### **FORS (Freight Operators Recognition) Gold Accredited Vehicles**

As a minimum Erith ensure that all HGV Tipper Lorries are FORS 'Gold' accredited.

FORS is an accredited scheme that aims to improve freight delivery in London and throughout the UK. Purpose of FORS is to improve safety and reduce the environmental impact and due to the sites exclusive location it is fundamental to the scheme that all HGV Tipper Lorries are accredited.

---



---

## 16. Road Closures/Abnormal Loads

Any road closures required will be applied for with Camden Borough Council

Current foreseen road closures:

- Tower Crane Erection

## 17. Plans for Monitoring Equipment

Noise dust and vibration monitors will be placed on each elevation and must be maintained at all times. Baseline readings have been taken and red and amber limits will be agreed with Camden Council. Any exceedance to the agreed amber limits will be alerted to the site team via text and email. At this point all works will cease to evaluate the cause and implement control measures/method changes.

## 18. Noise and Vibration

Noise and Vibration monitoring will be issued to all relevant parties via weekly environmental reports. All monitoring will be carried out by an independent third party to ensure impartiality.

We will be operating under Camden's Section 61 agreement. This limits the hours we can make heavy construction noise, pneumatic breaking for example, to the following hours:

08:00-10:00, 12:00-14:00 and 16:00-18:00 Monday to Friday.  
08:00-13:00 Saturdays. (Saturday working by agreement only)

## 19. Dust and Air Quality

Dust monitoring will also be carried out and included with weekly environmental report. All monitoring will be carried out by an independent third party to ensure impartiality.

During structural demolition works dust will be suppressed with water hoses applying water directly to the operation that is underway.

## 20. Waste Management

The proposed demolition activities will result in waste production. The following section outlines the key waste streams which will be produced and the proposed waste management and disposal methods.

Erith Contractors will implement a Site Waste Management Plan in accordance with Site Waste Management Plan Regulations 2008.

Erith endeavour to reuse or recycle 98% of all materials arising from the soft strip/demolition, leaving max, 2% to landfill.

Any hazardous materials identified after the asbestos removal will be disposed of correctly, for example:

- Fluorescent tubes will be collected and inserted into cardboard tubes and taken separately to a licensed disposal facility;
  - Paint tins, fridges, televisions/monitors and air conditioning units will be separated and disposed of accordingly; and
  - Plasterboard will be segregated and placed into separate skips.
-

---

All demolition materials will be segregated into separate waste streams at working level to separate hardcore, timber and metal products.

Timber will be sent off site for reuse or pulping. Metal products will be taken off site to be recycled. Erith Contractors are licensed to produce, transport and receive/dispose of waste materials. Copies of the Duty of Care Waste Transfer Notes etc., detailing description, producer and carrier of waste, will be kept on site and available for inspection.

### Example Waste Stream Process

Preamble: the following waste stream gives an informed example of how waste is taken through the waste hierarchy decisions from site to final destination(s). This is based on current waste management practices at current project. Preference is currently to co-mingle certain waste types to reduce emissions and control pollution on-project.

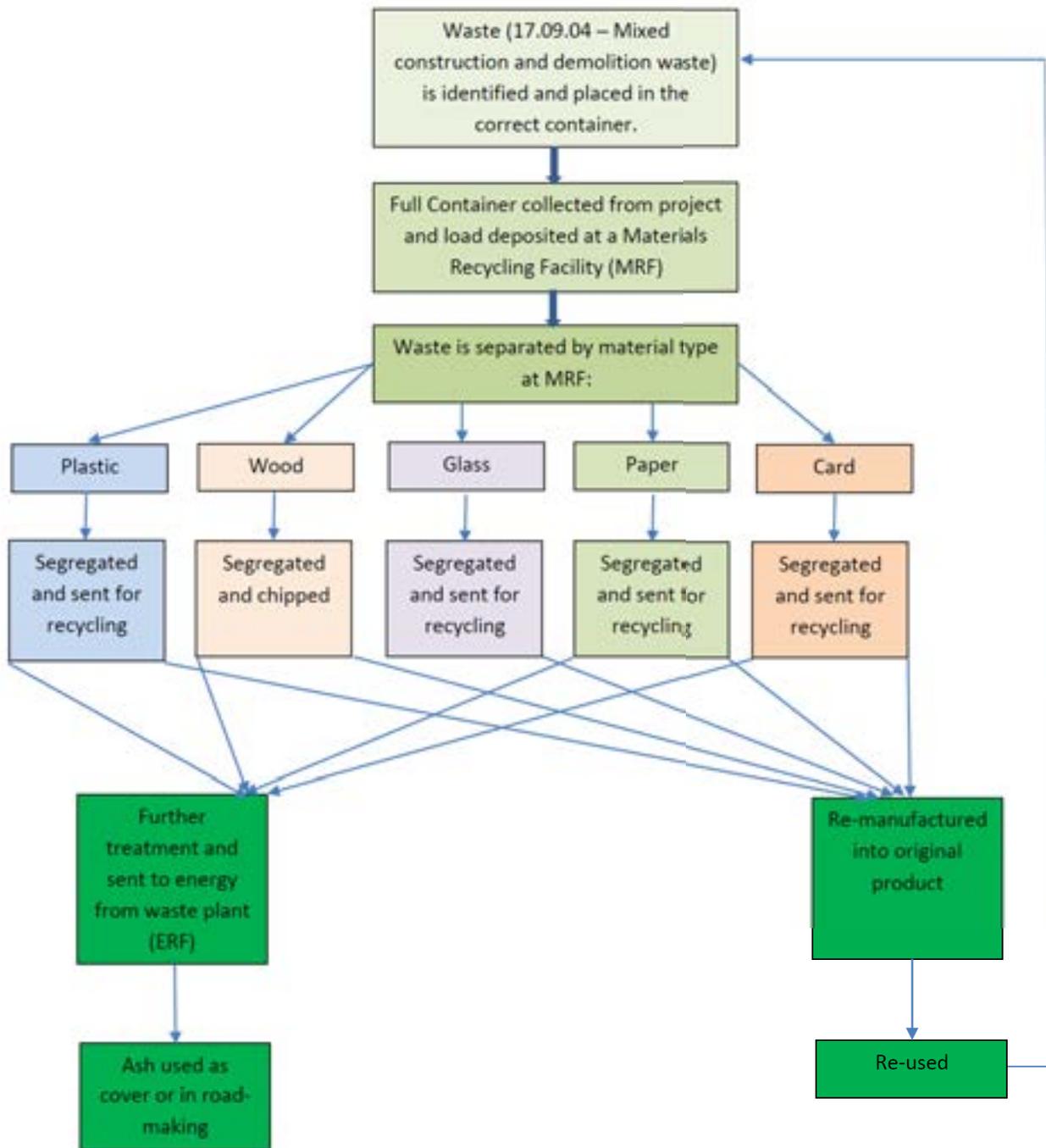
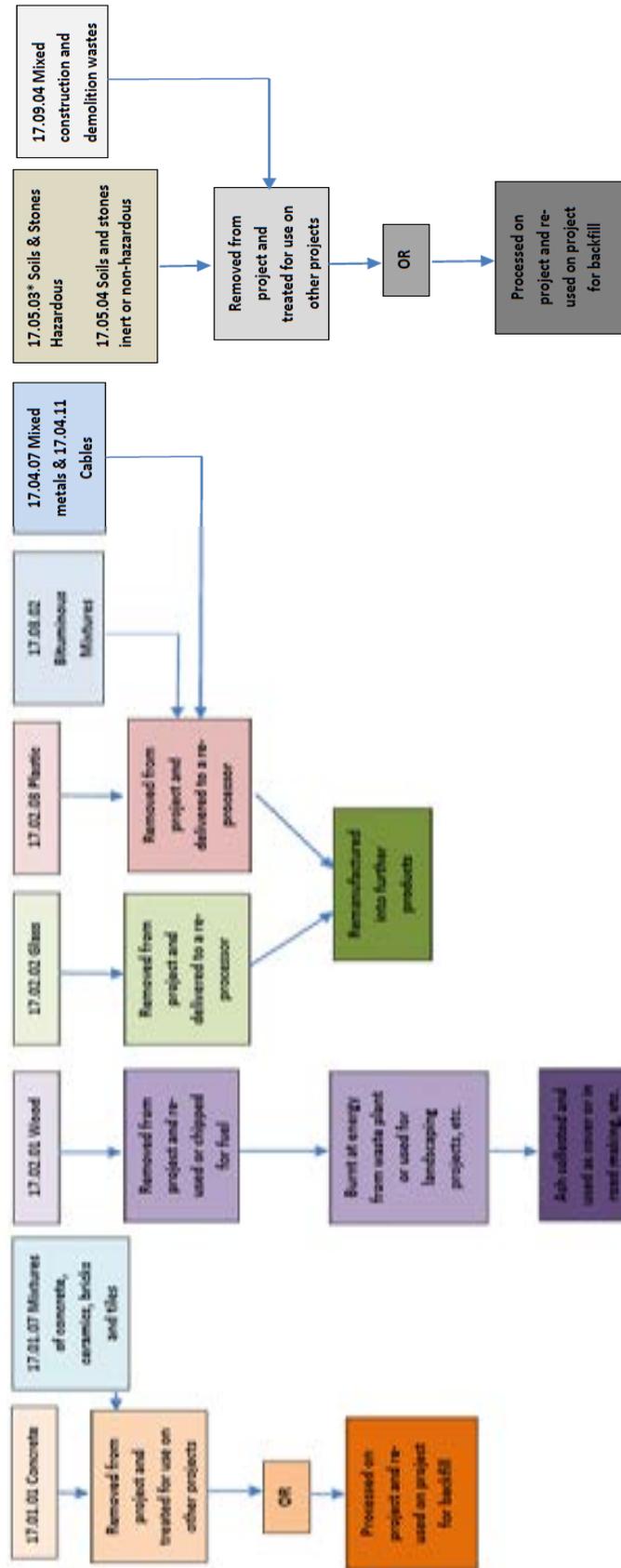


Figure 15 Waste stream diagram

**Example Waste Stream Process**

Preamble: the following waste stream gives an informed example of how waste is taken through the waste hierarchy decisions from site to final destination(s). This is based on current waste management practices at current project. Where it is technically, environmentally, economically practicable, high levels of wastes and materials are "source segregated", meaning segregated by waste type at the project.



**Figure 16 Waste stream process**

---

## 21. Water Resources

During the works, existing drainage and outfalls will be used.

## 22. Urban Ecology

No relevant ecology during the enabling works phase.

## 23. Archaeology and Built Heritage

Space House is a listed building of high importance to the local area, there are various heritage items within the site that are to be removed, retained or protected during the enabling phase of the project.

These include:

- Wood Panelling to Ground Floor
- Mosaics to stair walls
- External art installations
- Façade stone

## 24. Lighting

All existing lighting will be disconnected and temporary + emergency lighting installed.

All temporary lighting will be fed from the existing sub-stations.

## 25. Pest Control

At present pest control is in place from previous tenants, we will be continuing with existing controls.

## 26. Protection of Existing Installations

We will protect the four existing network sub-stations located in the basement and at ground floor level, whilst maintaining 24hr access for UKPN employees and sub-contractors.

## 27. Emergency Procedures

A project-specific Emergency Response Plan has been produced and is included within **Appendix 3** of the Construction Management Plan. The Emergency Response Plan will be communicated to all operatives at the initial Site Induction to incorporate the site emergency procedures.

The Emergency Response Plan will be updated to reflect any significant changes in the construction process as the project proceeds. Operatives will be notified of any significant changes as necessary.

It is suggested that on a project of this scale, that full exercises or drills are conducted on a monthly basis, to keep personnel aware of changing site dangers and practice response times and emergency procedures.

### First Aid and Fire

Erith Contractors Ltd will ensure, so far as is reasonably practicable, that all operatives, contractors' operatives and self-employed operatives will have access to first aid facilities. A suitably qualified person will be appointed to take charge of first-aid arrangements and their name made known at the Site Induction and via the site notice board. A suitably stocked first aid box will be maintained on site at all times. In the absence of the qualified person, an appointed person will be nominated to take charge of a first aid situation.

Fire precautions will consist of sufficient fire extinguishers appropriate for the types of fire that may occur which will be located at fire points in strategic areas around site - these will include a means of raising an alarm and fire action signs. Should a fire occur the alarm will be raised and all persons on site will proceed to the assembly point referenced in the site fire plan. The Site

---

---

Manager/Fire Marshal will then undertake a roll call of all persons. Follow procedures within incident response plan (*Appendix 3*).

All hot works will be undertaken as per the permit to work procedure.

Within the site, in-date fire extinguishers are to be in place at all times these will be utilised during the all phases of the works. As the fire alarm system will have been disconnected, a linked, wireless, pushbutton fire alarm system will be installed with a base station in site security to identify where the alarm has been activated.

### Bomb Hoax

Most bomb threats are made over the phone and the overwhelming majority are hoaxes, often the work of malicious jokers, although terrorists do make hoax calls with the intent of causing alarm and disruption. Any hoax is a crime and, no matter how ridiculous or unconvincing, must be reported to the police.

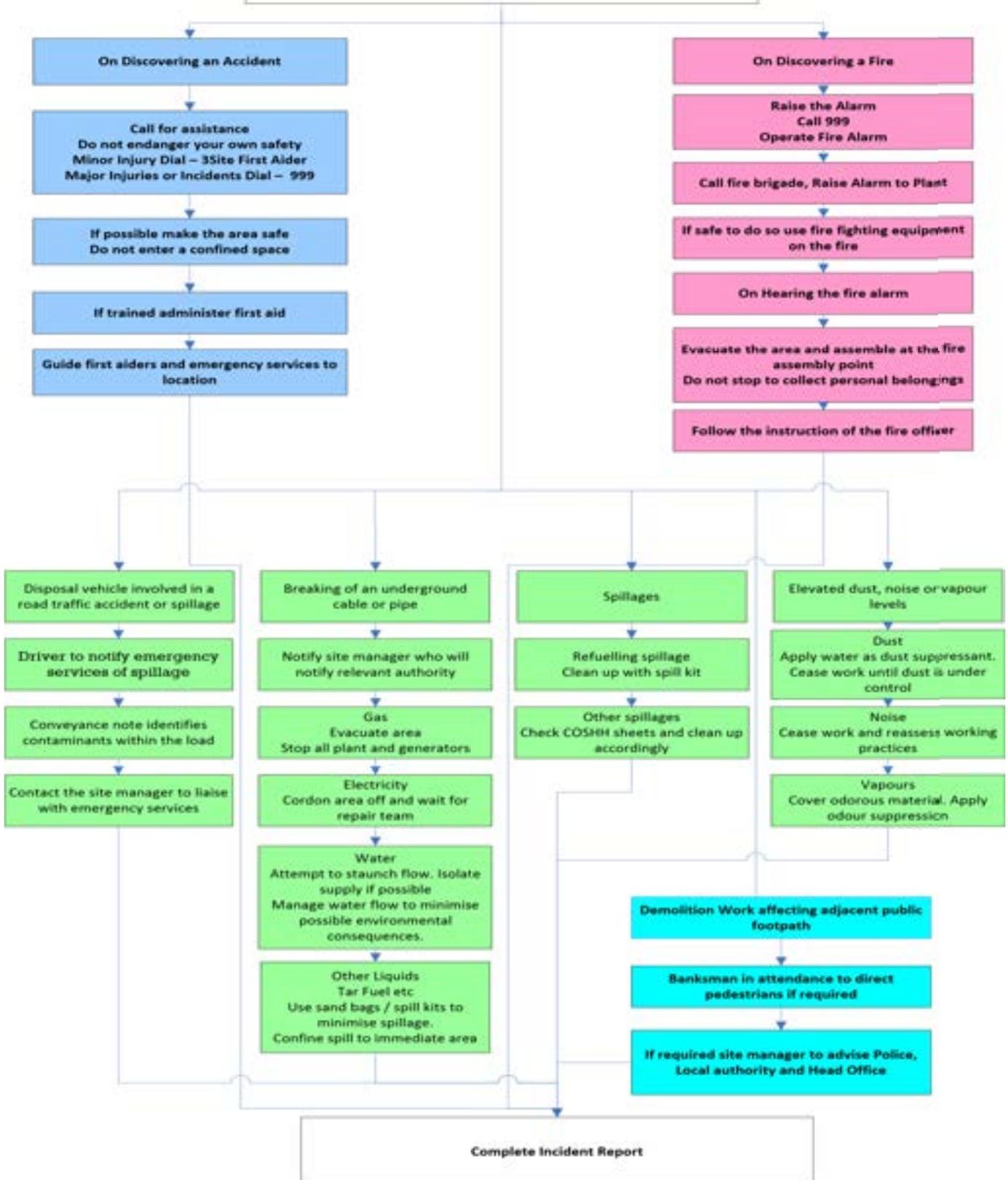
Calls may be of two kinds:

- Hoax threats designed to disrupt, test reactions or divert attention
- Threats warning of a genuine device – These may be attempts to avoid casualties or enable the terrorist to blame others if there are casualties. However genuine threats can provide inaccurate information about where and when a device might explode.

Consider that the member of staff who receives the threat may not be prepared – receiving such a threat may be the closest that many people ever come to acts of terrorism – so offer some basic advice for staff on handling a threat, for example:

- Stay calm and listen.
  - Obtain as much information as possible – try to get the caller to be precise about the location and timing of the alleged bomb and whom they represent. If possible, keep the caller talking.
  - Ensure that any recording facility is switched on.
  - When the caller rings off, dial 1471 (if that facility operates and you have no automatic number display) to see if you can get their number.
  - Immediately report the incident to the relevant manager or security team to decide on the best course of action and notify the police. If you cannot get hold of anyone, and even if you think the call is a hoax, inform the police directly. Give your impressions of the caller and an exact account of what was said.
  - If you have not been able to record the call, make notes for the security staff or police. Do not leave your post – unless ordered to evacuate – until the police or security arrive.
-

# Incident Response



---

## 28. Liaison with the Local Neighbourhood

Due to the project's location within London we consider it of the utmost importance to foster good relations with the surrounding businesses and residents. We intend to do this by;

- Liaising with local residents / business group representatives.
- Publishing regular newsletters giving information on the progress of the works, future planned activities and notice of any likely disruption to roads and pedestrian access.
- Erith will register the project with the Considerate Constructors Scheme, and make all personnel working on site fully aware of its recommendations for behaviour.
- Operating hours and breaking times will be strictly observed in accordance with the voluntary section 61 notice which will be applied for by Erith prior to the commencement of noisy works.

## 29. Liaison with Other Sites to Manage Cumulative Impacts

Any substantial sites in the vicinity will be liaised with throughout the duration of the contract. This will include logistical discussions

## 30. Monitoring Proposals

Allowable noisy time periods, noise, dust and vibration limits, which to be agreed with Camden Council, will be monitored in real time with weekly environmental reports issued.

Erith will work to the approved levels issued by Camden Council unless via special dispensation.

All monitoring will be carried out by an independent third party to ensure impartiality.

- Boundary static dust monitoring at all three elevations at strategic locations of the site.
- Background monitoring prior to works commencement and once weekly thereafter.
- Live dust monitoring at all three elevations once weekly at the site boundary.
- Downloads taken each week and graphs issued to client.
- Noise monitoring at all three elevations on weekly basis with base levels established prior to commencement of the works.
- Movement monitoring at all three elevations weekly at strategic locations of the site.

Results will be continually reviewed and should elevated levels occur work will cease whilst consultations are undertaken with the relevant parties and if necessary alternative methods will be considered.

### Agreed Trigger Levels

#### Noise

10 Hour Average: **75dB** (TBC by Camden Council)

#### Vibration - Residential

Amber            **3m/s**  
Red                **5m/s**    (TBC by Camden Council)

#### Dust

Continuous monitoring of particulates (PM10 and Total Suspended Particulates (TSP))

Maximum level is set at 250mg/m<sup>3</sup> over a 15 minute period.

Red alerts will be activated if site breaches these levels.

---