Construction Management Plan

pro forma

Camden

Contents

Revisions	**3**
Introduction	**4**
Timeframe	**6**
Contact	**7**
Site	**9**
Community liaison	**12**
Transport	**14**
Environment	**26**
Agreement	**31**

Revisions & additional material

Please list all iterations here:

Date	Version	Produced by
29.03.22	**Rev A**	
30.03.22	**Rev B**	

Additional sheets

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

Date	Version	Produced by

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.**"

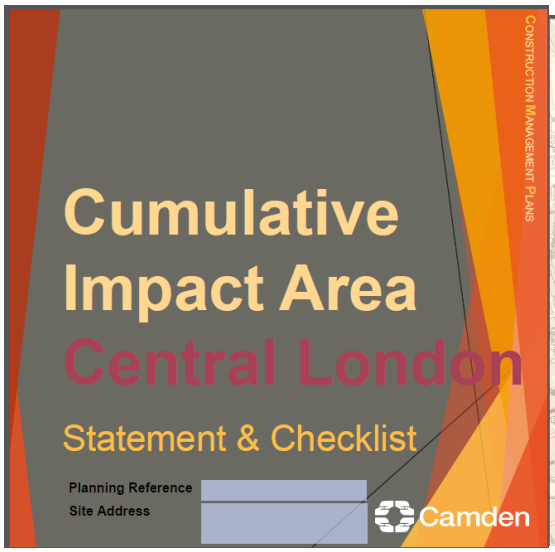
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. It is preferable if this document, and all additional documents, are completed electronically 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.

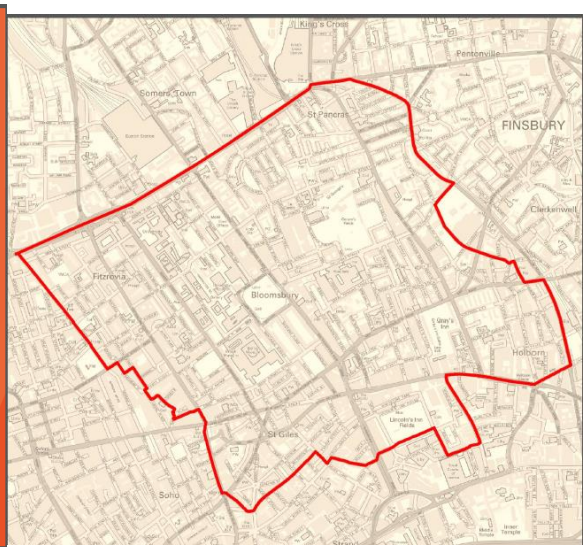
(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearance, delivery of plant & materials, construction etc.)

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.

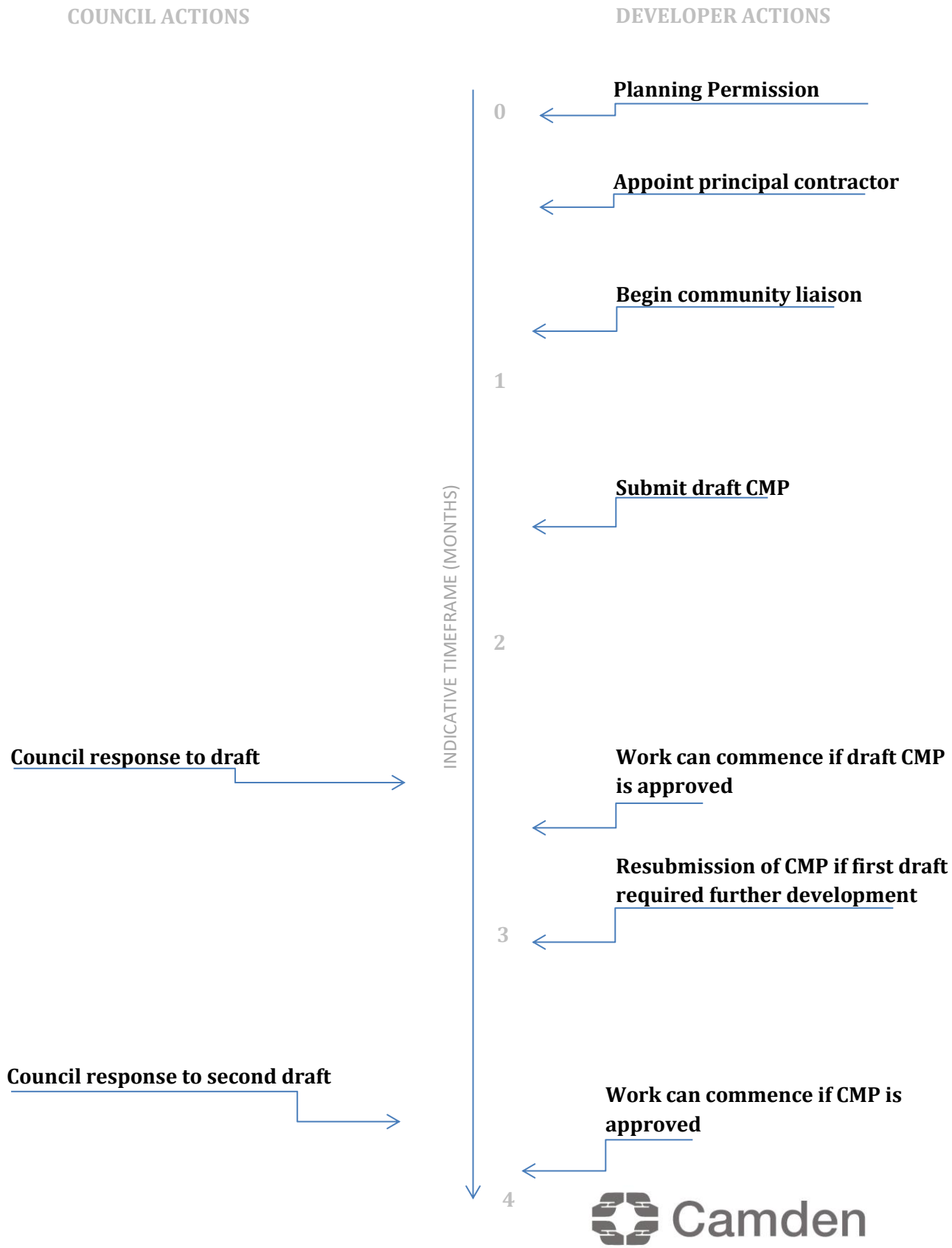
The CIA Checklist can be found at https://www.camden.gov.uk/about-construction-management-plans





Camden

Timeframe


COUNCIL ACTIONS
DEVELOPER ACTIONS
Planning Permission
0
Appoint principal contractor
Begin community liaison
1
Submit draft CMP
INDICATIVE TIMEFRAME (MONTHS)
2
Council response to draft
Work can commence if draft CMP is approved
Resubmission of CMP if first draft required further development
3
Council response to second draft
Work can commence if CMP is approved
4

Contact

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

Address: The Joint – 1-6 Field Street & 14-16 Leeke Street, London WC1X 9JF

Planning reference number to which the CMP applies: 2021/3603/P

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

Name: Steven Reid

Address: Scott Osborn Ltd, 1st Floor, Unity 28 M11 business Link, Parsonage Lane, Stansted, Essex, CM24 8TY

Email: stevereid@scottosborn.com

Phone: 01279 715171

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: Details to be provided following the appointment of a contractor

Address: TBC

Email: TBC

Phone: TBC

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: Details to be provided following the appointment of a contractor

Address: TBC

Email: TBC

Phone: TBC

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: Details to be provided following the appointment of a contractor

Address: TBC

Email: TBC

Phone: TBC

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.

The site is known as “The Joint”. A site location plan is attached as **Appendix A**

The site is located in the London Borough of Camden within the Kings Cross Conservation Area. The site is served by two addresses, Field Street to the North West & Leeke Street to the South-East.

The South-West elevation faces towards railway lines that serve London undergrounds Circle & District Lines

The building is not listed however it does bound listed buildings to the North East

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).

First floor extension to provide additional floors pace plus an extension to the 3rd floor to provide an additional 2 number residential units

The main challenges will be delivery of materials and removal of waste from site. Access to the site is limited due to the narrow streets that surround it

The site is in close proximity to several other buildings consisting of residential and commercial properties.

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).

As no Principal Contractor has been appointed yet, a detailed programme of works has not been confirmed.

Anticipated duration of works 70 weeks

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

The following standard working hours will be implemented on site:

08.00am – 18.00pm Monday to Friday

08.00am – 13.00pm Saturday

No working on Sundays or public holidays

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.).

The site is bound on three sides by adjacent properties which will be the nearest potential receptors which may be affected by onsite activities.

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 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.

No consultation has been carried out specific to the draft CMP to date. However, in addition to statutory consultation periods required by the LPA through the application's determination period, the Applicant's design team has met with neighbouring residents to discuss the proposals. The Applicant will seek to formally engage with neighbours on the draft CMP following appointment of a Principal Contractor and prior to the CMP being finalised.

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.

Details to be provided once contractor is appointed

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.

Following the appointment of a contractor the site will be registered with the Considerate Contractor Scheme

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.

We are currently unaware of any existing or anticipated construction sites planned for the forthcoming period If necessary the appointed contractor shall communicate with adjacent sites in a bid to coordinate the movement of site traffic, including deliveries and waste removals, within the area to reduce its impact on the local community

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 for further advice or guidance on any aspect of this section.

CLOCS Contractual Considerations

15. Name of Principal contractor:

As this is a draft CMP , Principal Contractor details shall be provided once appointed

16. Please submit the proposed method for checking operational, vehicle and driver compliance with the CLOCS Standard throughout the duration of the contract.

Details to be provided following the appointment of a contractor

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:

Details to be provided following the appointment of a contractor

Please contact 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.

Vehicles will arrive at site via Kings Cross Road heading East, turning right into either Leeke Street or Field Street – **See Appendix B**

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.

All deliveries shall be pre booked where possible and allocated a delivery time

Details of the route will be issued to all contractors/suppliers prior to commencement of works

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

The following types of vehicles will be used to facilitate the project:

- Wait & Load waste collections – transit tipper vans or similar to collect waste from site L5.88m x W 2.00m x H 2.52m
- Deliveries – Transit vans or similar L 5.85m x W 2.00m x H2.52m
- Scaffold Lorry – L 8.0m x W x 2.32m x H 2.52m
- Steel delivery vehicle – L 9.0m x W 2.3m x H 2.5m
- Flatbed Lorry – L 8.0m x W 2.3m x H 2.5m

Expected dwell times:

- Wait & Load waste – 30 to 60 mins
- Collections & Deliveries – 10-20 mins
- Offloading of materials – 20-25 mins

It is anticipated that there will be in the region of 6-8 vehicles a day, although it may be necessary to increase this number at certain stages of the project.

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.

Once a contractor is appointed they will check with the local authority to establish any other sites that may require coordination with

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

Not required at this stage

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.

Possible suspension of single yellow line on Leeke Street to provide enhanced access to site. NOTE currently yellow line is occupied by Leeke St. motorcycles stock

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.

Once appointed the contractor shall investigate the potential for using construction material consolidation and other measures such as electric vehicles

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).

Vehicle engine idling will not be permitted

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.

See **Appendix C**

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.

All vehicle movements to and from the site will be supervised by banksmen who will manage the interaction between construction vehicles, pedestrians and other road users.

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.

As per Q 19.c

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 and the like should not be required as vehicles making deliveries to site and removing waste will park on the road not mud.

If required a jet wash will be provided to maintain minor wheel cleaning and road side clean down

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 regard 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/offloading shall take place from either Leeke St or Field St. **See Appendix C**

Prior to works commencing one window and brickwork bay on Field St elevation shall be removed and a roller shutter door installed to provide material deliver access and waste removals.
The bay opposite the adjacent car park shall be removed as this is where the road is wider

Utilise shutter access at the end of Leeke Street for materials and waste removals
It has been confirmed that the Shutter adjacent to Leeke St is not in use as this houses the office area behind. Consultation to be held with this occupier to confirm suitability of use in this area

Possible Suspension of yellow line on Leeke St to prevent motorcycle parking and improve vehicular access to site

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.

See Q 20b

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.

This will likely be located on the Ground Floor accommodation - Full site set up plan to be provided once main contractor is appointed

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.

Possible Suspension of yellow line on Leeke St to prevent motorcycle parking and improve vehicular access to site

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.

Not required

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.

Not required

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.

Not required

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.

Phase 1 Scaffolding to be installed to both Field Street & Leeke Street elevations

Phase 2 scaffolding will not be installed until Network rail approval has been gained

See attached Appendix D

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.

See above

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.

GAS, Cadent (commercial) ES Pipelines (Domestic) :

Presently there are 8no. metered gas services to the property, with the meters all U6 size (65kW). 1no. serving the commercial area, and 1no. for each apartment.

As the use of gas is not proposed all gas services shall be disconnected and removed.

WATER, Thames Water:

Presently there are 8no. metered mains water service connections to the property, with all supplies being standard 25mm MDPE connections with meters externally within the footpaths. 1no. supply serves the commercial area, and 1no. to each apartment.

As the position and size of existing supplies are unsuitable applications for new supplies have been undertaken. The building shall be served by 3no. new mains water service connections, one for the domestic water requirements of the commercial element, one for the commercial sprinkler system, and a combined service for the residential units domestic water requirements and residential sprinkler system.

ELECTRIC, UKPN:

The building is currently served by 3no. 100A 3 phase electrical supplies 1No residential 2No commercial. The residential shall be retained however, the position and size of existing commercial supplies are unsuitable and applications for new a supply have been undertaken.

Each demise (Office commercial element and Residential) shall have their own dedicated electrical supply.

TELECOMS, BT:

A new BT service has been requested to each demise (Office commercial element and Residential) with the appropriate cabling entering from the road via rigid ducts. The BT main service shall be provided to the ground floor comms cupboard, and all secondary fibre & copper cabling shall emanate from there.

An initial enquiry has been made and NSI L/HSN/00A has been progressed to FTTP planning. The site has been offered fibre infrastructure technology, Fibre to the Premises FTTP.

As the project progresses any excavation sharing and a detailed traffic management plans will be addressed.

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.

Noisy work will be restricted to between 0800 and 1800 Monday to Friday and between 0800 and 1300 on Saturdays. No works will be carried out on Sundays and Bank Holidays.

Hand tools including cordless drills, nail guns, hammer drills, torque guns

In addition to the above noise will also be generated by events such as scaffold and steel deliveries, however due to the limited duration during the working day these will not significantly add to noise levels

Contractors will use well-maintained and silenced plant and equipment including compressors, generators and power tools.

The CPM will endeavour to use suppliers and contractors that use electrically powered vehicles where possible.

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.

A Noise & Vibration Impact assessment report has been carried out – KP Acoustics – 22784.NVA.01 - Appendix F

30. Please provide predictions for noise and vibration levels throughout the proposed works.

As per Noise & Vibration report – 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.

Noisy works shall not be outside of normal working hours in accordance with local authority restrictions

The site management team will liaise with tenant and neighbour representatives regarding noise levels to ensure that works do not cause interference

Every effort will be made to ensure all reports of excessive noise are addressed accordingly

To mitigate noise emissions from site screening and acoustic enclosures will be utilized where appropriate/applicable

Consideration will be given to specific tasks and possible noise output from plant and machinery required to carry out these works. In all instances where electrically powered plant can be used, this will be the case as opposed to diesel or petrol powered

Where it cannot be avoided, all diesel/petrol driven plant will be fitted exhaust silencing equipment

Operatives will be trained to employ appropriate techniques to keep site noise to a minimum, and will be effectively supervised to ensure that best working practices in respect of noise reduction are followed

All employees will be advised regularly on:

- The proper use of tools and equipment
- The positioning of machinery on site to reduce the emission of noise to the neighbourhood
- The avoidance of unnecessary noise when carrying out manual operations and when operating equipment

It is not anticipated that vibration monitoring will be required

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

Details to be provided following the appointment of a contractor

33. Please provide specific details on how air pollution and dust nuisance arising from dusty activities on site will be prevented. This should be relevant and proportionate to activities due to take place, with focus on both preventative and reactive mitigation measures.

All spoil and waste that is to be removed from site shall be bagged or placed into suitable containers ready to remove from site. These will then be transferred straight to waste removal vehicles for disposal. At no time will waste be left to accumulate or be left exposed

- Use water as dust suppressant
- Windows to be kept closed where dust may affect adjacent buildings
- Plan site layout – locate dust activities away from sensitive areas
- Scaffold to be netted/wrapped to prevent migration of dust/noise
- More details will be provided following the appointment of a contractor

An Air Quality Assessment has been carried out – Miller Goodall / 102759 **See appendix E**

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.

Manual washing down and jet wash provided if required.

Significant amounts of dirt/dust are not anticipated on the public highway

35. Please provide details describing arrangements for monitoring of noise, vibration and dust levels, including instrumentation, locations of monitors and trigger levels where appropriate.

As the project is deemed as minor, monitoring of dust and vibration is not required.

Noise controls will be provided, if necessary following the undertaking of a noise assessment

36. Please confirm that an Air Quality Assessment and/or Dust 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 2014 (SPG) (document access at bottom of webpage), and that the summary dust impact risk level (without mitigation) has been identified. The risk assessment must take account of proximity to all human receptors and sensitive receptors (e.g. schools, care homes etc.), as detailed in the SPG. **Please attach the risk assessment and mitigation checklist as an appendix**.

An Air Quality Assessment has been carried out – Miller Goodall / 102759 **See appendix E**

37. Please confirm that all of the GLA's 'highly recommended' measures from the SPG document relative to the level of dust impact risk identified in question 36 have been addressed by completing the GLA mitigation measures checklist. (See Appendix 7 of the SPG document.)

To be provided once contractor is appointed

38. Please confirm the number of real-time dust monitors to be used on-site.

Note: **real-time dust (PM_{10}) monitoring with MCERTS 'Indicative' monitoring equipment will be required for all sites with a high OR medium dust impact risk level**. If the site is a 'high impact' site, 4 real time dust monitors will be required. If the site is a 'medium impact' site', 2 real time dust monitors will be required.

The dust monitoring must be in accordance with the SPG and IAQM guidance, and **the proposed dust monitoring regime (including number of monitors, locations, equipment specification, and trigger levels) must be submitted to the Council for approval**. Dust

monitoring is required for the entire duration of the development and must be in place and operational **at least three months prior to the commencement of works on-site**. Monthly dust monitoring reports must be provided to the Council detailing activities during each monthly period, dust mitigation measures in place, monitoring data coverage, graphs of measured dust (PM_{10}) concentrations, any exceedances of the trigger levels, and explanation on the causes of any and all exceedances in addition to additional mitigation measures implemented to rectify these.

In accordance with Camden's Clean Air Action Plan, the monthly dust monitoring reports must also be made readily available and accessible online to members of the public soon after publication. Information on how to access the monthly dust monitoring reports should be advertised to the local community (e.g. presented on the site boundaries in full public view).

Inadequate dust monitoring or reporting, or failure to limit trigger level exceedances, will be indicative of poor air quality and dust management and will lead to enforcement action.

As the site is deemed as minor the use of two real time dust monitors will not be required

See Q33 for dust 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).

Details to be provided following the appointment of a contractor

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

Asbestos surveys to be carried out when a contractor is appointed

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.

Details to be provided following the appointment of a contractor

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. See the Mayor of London webpage 'Non-Road Mobile Machinery (NRMM)' for more information, a map of the Central Activity Zone, and for links to the NRMM Register and the NRMM Practical guide (V4): https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm

Direct link to NRMM Practical Guide (V4):
https://www.london.gov.uk/sites/default/files/nrmm_practical_guide_v4_sept20.pdf

From 1st 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 1st 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 (mm/yy - mm/yy): 70 Weeks

b) Is the development within the CAZ? (Y/N):N

c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N): N/A

d) Please confirm that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered: N/A

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: N/A

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: N/A

43. Vehicle engine idling (leaving engines running whilst parked or not in traffic) produces avoidable air pollution and can damage the health of drivers and local communities. Camden Council and City of London Corporation lead the London **Idling Action Project** to educate drivers about the health impacts of air pollution and the importance of switching off engines as a simple action to help protect the health of all Londoners.

Idling Action calls for businesses and fleet operators to take the **Engines Off pledge** to reduce emissions and improve air quality by asking fleet drivers, employees and subcontractors to avoid idling their engines wherever possible. Free driver training materials are available from the website: https://idlingaction.london/business/

Please provide details about how you will reduce avoidable air pollution from engine idling, including whether your organisation has committed to the Engines Off pledge and the number of staff or subcontractors who have been provided with free training materials.

Engine idling will not be permitted on site

- 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: ……..

Print Name: ……

Position: ……

Please submit to: planningobligations@camden.gov.uk

End of form.

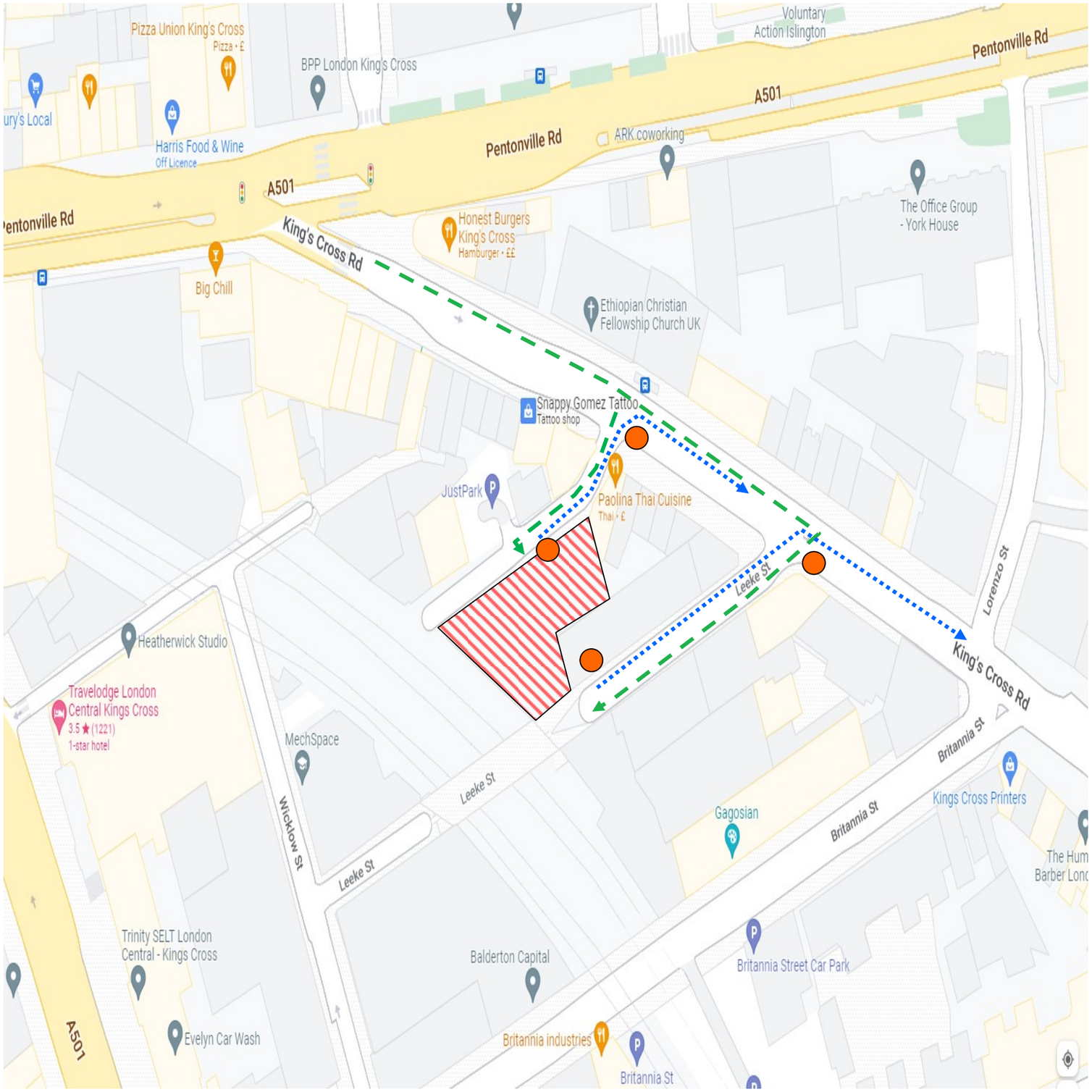
V2.7

Appendix A - Site Location Plan

Site Demise

Scott Osborn

Appendix B - Proposed Access Routes for Vehicles



N
W E
S

Scott Osborn

The site is situated on Field street & Leeke Street and is known as The Joint Access for vehicles is off Kings Cross Road

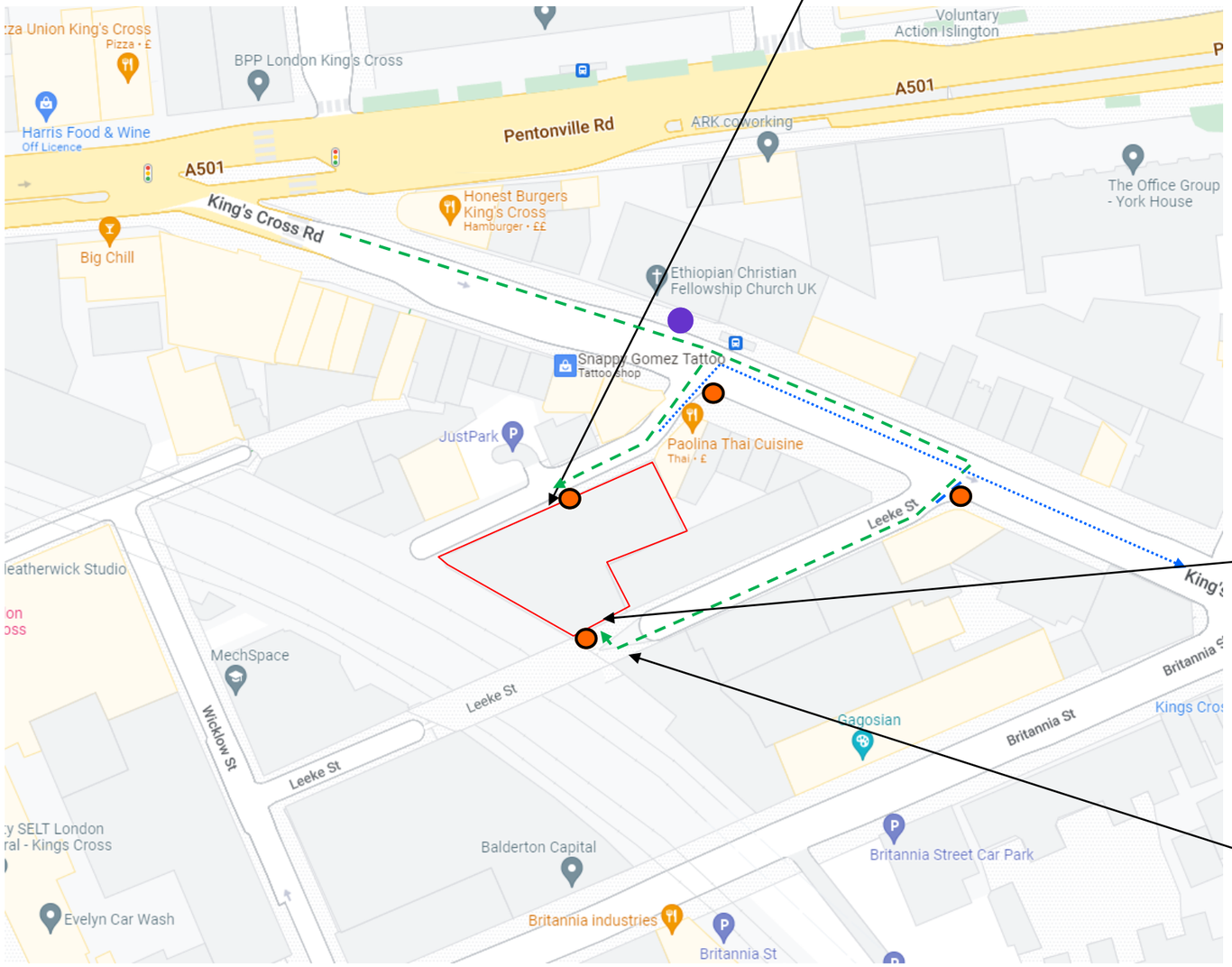
Vehicles will arrive on Kings Cross Road heading East, turning right into Field Street or Leeke Street

Due to the restrictive size of the access roads, under banksman control at all times, vehicles will then need to reverse back out onto Kings Cross Road, again heading East to leave the area

Banksman position

Appendix D – Site Loading Points

Remove one window and brickwork bay on Field St elevation and install roller shutter door to provide material deliver access and waste removals Remove bay opposite car park where the road is wider due to a



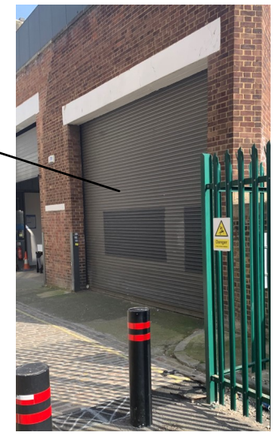
Entrance route into site

Exit route for vehicles from site

Due to the restrictive size of the access roads, under banksman control at all times, vehicles will then need to reverse back out onto Kings Cross Road, heading East to leave the area

Banksman Position
Banksman to be in attendance during vehicles arriving & departing site

Utilise shutter access on Leeke Street for materials and waste removals



Shutter not in use to building adjacent to Leeke St shutter n due to office location behind

Scott Osborn

MILLER GOODALL
ACOUSTICS AND AIR QUALITY

AIR QUALITY ASSESSMENT

on behalf of

PPF REAL ESTATE NOMINEE 1 LTD AND PPF REAL ESTATE NOMINEE 2 LTD C/O CBRE INVESTMENT MANAGEMENT

for

1-6 FIELD STREET AND 14-16 LEEKE STREET LONDON WC1X 9DG

REPORT DATE: 22ND FEBRUARY 2022

REPORT NUMBER: 102759

Miller Goodall Ltd
Ground Floor
Ashworth House
Deakins Business Park
Blackburn Road
Egerton
Bolton
Lancashire
BL7 9RP

Tel: 01204 596166

www.millergoodall.co.uk

Company registration number 5201673

Summary

This air quality report has been prepared to accompany a planning application for a proposed reconfiguration and extension of a development at 1-6 Field Street and 14-16 Leeke Street London WC1X 9DG. It assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.

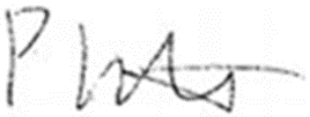
The assessment of dust soiling and human health impacts during the demolition and construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the demolition and construction phase are not significant.

Concentrations of NO_2 and PM_{10} are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable for residential/ commercial use with regards to air quality. Concentrations of $PM_{2.5}$ are expected to be below the annual mean target.

An air quality neutral assessment has also been undertaken. The assessment concluded that the proposed development will be neutral in terms of building and transport emissions.

The proposed development is not expected to have a significant impact on local air quality.

There is, therefore, no reason for this application to be refused on the grounds of air quality.

Prepared By	Unam Ejaz	Reviewed By	Philip Walton
Signed		Signed	
Date	16th February 2022	Date	16th February 2022

Record of changes

Date	Change	Initials
16th February 2022	First issue	UE
22nd February 2022	Final Issue	UE

Contents

_Toc95905569
1 Introduction 2
2 Site Description 2
3 Proposed Development 2
4 Policy Context 3
4.1 Air Quality Objectives 3
4.2 LBoC Air Quality Action Plan (AQAP) 4
5 Methodology 4
5.1 Data Sources 4
5.2 Consultation 5
5.3 GLA Construction Dust Impact Assessment 5
5.4 Camden Planning Guidance Air Quality (January 2021) 5
5.5 Simple Air Quality Assessment 7
5.6 Air Quality Neutral Assessment 7
5.7 Air Quality Positive 7
6 Baseline Air Quality 8
6.1 Local Air Quality 8
6.2 Air Quality Monitoring 8
6.3 Background Concentrations 9
6.4 LAEI Concentrations 9
7 Construction Dust Impact Assessment 10
7.1 Step 1 – Requirement for a Detailed Assessment 10
7.2 Step 3 – Site-Specific Mitigation 11
7.3 Step 4 – Determine Significant Effects 12
8 Effect of Air Quality on the Proposed Development 12
9 Impact of the Proposed Development on Existing Air Quality 12
10 Air Quality Neutral Assessment 12
11 Summary of Impacts and Conclusion 13

1 Introduction

1.1 Miller Goodall Ltd has been instructed to prepare an air quality assessment for a proposed reconfiguration and extension of a development at 1-6 Field Street and 14-16 Leeke Street London WC1X 9DG. The full planning application is available online 2021/3603/P. The site lies within the administrative boundary of London Borough of Camden (LBoC).

1.2 The report provides a review of the existing air quality in proximity to the proposed development site and assesses the potential impact of the proposed development on local air quality following Local Air Quality Management Technical Guidance[1] and EPUK and IAQM guidance[2].

1.3 The report provides an assessment of the potential air quality impacts associated with the construction and operational phases of the proposed development. The potential air quality changes at existing sensitive receptors adjacent to the site and roads subject to increased vehicle generation from the development are assessed. The suitability of the site for the intended use is also assessed.

1.4 The main pollutants of health concern from road traffic exhaust releases are nitrogen dioxide (NO_2) and fine particulates, normally assessed as the fraction of airborne particles of mean aerodynamic diameter less than ten micrometres (PM_{10}) and 2.5 micrometres ($PM_{2.5}$) since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and congested areas. This assessment has therefore focused on the impact of the proposed development on concentrations of NO_2, PM_{10} and $PM_{2.5}$.

2 Site Description

2.1 The site is currently occupied by a four-storey building that is formed from a more historic two-storey lower level that contains a now vacant recording studio with floors above that contain seven residential flats.

2.2 The site is located within King's Cross Conservation Area and is bound between Field Street to the north Leeke Street to the south. The site is nestled within old and new emerging developments that are used for light industrial, commercial uses with residential elements. To the south and west, the site is bound by a railway line (Thames Link Railway) across which there are also mixed-use buildings.

2.3 The site location is shown in **Appendix A**.

3 Proposed Development

3.1 The proposed development is for the extension at first floor level to provide additional office floorspace (Use Class E(c)) floorspace, and extension with terrace at third floor level to provide two additional residential units(Use Class C3).

3.2 There is no car-parking proposed.

[1] Department for the Environment Food and Rural Affairs (2018) '*Local Air Quality Management Technical Guidance Document LAQM.TG (16)*', London: Defra.

[2] EPUK and IAQM (January 2017) Land Use Planning and Development Control: Planning for Air Quality (v1.2)

3.3 The building will be heated with air source heat pumps.

4 Policy Context

4.1 Air Quality Objectives

4.1.1 The standards and objectives relevant to the LAQM framework have been prescribed through the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations 2002; the Air Quality Standards Regulations 2010 set out the combined Daughter Directive limit values and interim targets for Member State compliance.

4.1.2 The United Kingdom left the European Union on 31st January 2020 and is no longer a member state. However, the current framework of air quality legislation was converted into domestic law through the European Union (Withdrawal) Act 2018[3].

4.1.3 The relevant air quality standards and objectives are presented in **Table 1**. Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health.

Table 1: Air Quality Strategy Objectives (England) for the Purposes of Local Air Quality Management

Pollutant	Air Quality Objective	
	Concentration	Measured As
Nitrogen dioxide (NO_2)	200 µg/m^3	1-hour mean not to be exceeded more than 18 times per year
	40 µg/m^3	Annual mean
Particles (PM_{10})	50 µg/m^3	24-hour mean not to be exceeded more than 35 per year
	40 µg/m^3	Annual mean
Particles ($PM_{2.5}$)	25 µg/m^3	Annual mean (target)

4.1.4 Where an air quality objective is unlikely to be met by the relevant deadline, local authorities must designate those areas as Air Quality Management Areas (AQMAs) and take action to work towards meeting the objectives. Following the designation of an AQMA, local authorities are required to develop an Air Quality Action Plan (AQAP) to work towards meeting the objectives and to improve air quality locally.

4.1.5 Possible exceedances of air quality objectives are generally assessed in relation to those locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.

[3] UK Parliament (2018): http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted

4.1.6 As the first and second floors have proposed commercial use, the annual mean air quality objectives do not apply; however, the short-term objectives still apply[1]. At the third floor, residential uses are proposed so annual mean air quality objectives.

4.2 LBoC Air Quality Action Plan (AQAP)

4.2.1 Camden's Clean Air Action Plan[4] has been produced by LBoC as part of the London's Local Air Quality Management. It outlines the actions LBoC proposes to take to improve air quality in the borough between 2019 and 2022. The key priorities of the plan include:

- Reducing construction emissions
- Reducing building emissions
- Reducing transport emissions
- Supporting communities and schools
- Reducing emissions from delivery, servicing and freight
- Continuing public health and awareness raising
- Lobbying

5 Methodology

5.1 Data Sources

5.1.1 The air quality assessment has been undertaken and prepared with reference to information from several sources, as detailed in **Table 2**.

Table 2: Key Information Sources

Data Source	Reference
London Borough of Camden (LBoC)	LBoC (2021) *Camden Planning Guidance Air Quality* LBoC (2021) *2020 Air Quality Annual Status Report* LBoC *Camden Clean Air Action Plan (2019 – 2022)*
London Borough of Islington	London Borough of Islington (2020) 2019 Air Quality Annual Status Report
Department for Environment Food and Rural Affairs (Defra)	Defra *Local Air Quality Management Technical Guidance TG(16), updated 2021*
Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM)	EPUK and IAQM (January 2017) *Land Use Planning and Development Control: Planning for Air Quality (v1.2)*
Ministry of Housing, Communities & Local	Planning Practice Guidance: Air Quality, November 2019

[4] LBoC *Camden Clean Air Action Plan (2019 – 2022)*

Data Source	Reference
Government	National Planning Policy Framework (NPPF), July 2021
Defra's LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps NOx to NO_2 Calculator
TTP Consulting	Traffic Data
Greater London Authority (GLA)	Greater London Authority Sustainable Design and Construction Supplementary Planning Guidance (April 2014) Greater London Authority *The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance* (July 2014)
London Atmospheric Emissions Inventory (LAEI)	Background pollutant maps

5.2 Consultation

5.2.1 The proposed air quality assessment methodology was sent to Mr. Tom Parkes (Senior Air Quality Office) of LBoC[5]. Mr. Tom Parkes, sent across the link to Camden's supplementary guidance and suggested that pre-application advice can be obtained through the paid service. As the proposed development is classified as minor and the methodology required is outlined in Camden's planning guidance, pre-application advice was not progressed.

5.3 GLA Construction Dust Impact Assessment

5.3.1 The GLA provides guidance[6] on the assessment of air quality impacts arising from construction and demolition activities and has been used in this assessment. This section follows a risk assessment to determine the likely impact of the development on nearby receptor location during the construction phase and goes on to recommend mitigation measures that should be implemented to reduce any impact. The methodology for the assessment is shown in **Appendix B.** The study area in relation to the construction dust and the buffer zones of <20 m, 20 m – 50 m and 50 – 100 m from the site are shown in **Appendix C**. The dust assessment informed the recommended mitigation outlined in **Appendix D**.

5.4 Camden Planning Guidance Air Quality (January 2021)

[5] Email Miller Goodall Ltd. to Tom Parkes (LBoC), 11th Feb 2022. Email Tom Parkes (LBoC) to Miller Goodall Ltd. on 11th Feb 2022.

[6] Greater London Authority (GLA) (2014) '*The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance'* (July 2014)

5.4.1 The LBoC Supplementary Planning Document (SPD)[7] provides guidance on air quality assessments to support policies in the Camden Local Plan 2017.

5.4.2 As per the SPD, developments which will not result in additional NO_x and/or PM_{10} emissions and present no risk in worsening air quality, but introduce new sensitive uses to an area which breaches the air quality standards for NO_2 or PM_{10} does not need to model the impacts or include cumulative impacts. The SPD states *"all developments are to protect future occupants from exposure to poor air quality"* and as the entire Borough is declared as an AQMA *"it is widely accepted that there is no safe level".*

5.4.3 'Major' developments are defined as schemes of 10 or more dwellings or buildings where where the floorspace created is 1000 square metres or more.

5.4.4 The **Table 3** below shows the classification of the scheme and type of assessment required.

Table 3 Classification of the site to assess the requirement of an air quality assessment

Criteria met →				→ Assessments required		
Scale	***Area of poor air quality[1]***	***Scheme brings sensitive receptors***	***Scheme brings air quality impacts [2]***	***Air Quality Assessment type***	***Air Quality Neutral***	***Construction and Demolition Impacts***
Major	Yes	Yes	Yes	Detailed	Required	Required
			No			
		No	Yes	Detailed		
			No	Basic		
	No	Yes	Yes	Detailed		
			No	Basic		
		No	Yes	Detailed		
			No	Basic		
Minor	Yes	Yes	Yes	Detailed	*Not required*	*[3]May be required*
			No	Basic		
		No	Yes	Basic		
			No	*Not required*		
	No	Yes	Yes	Detailed		
			No	*Not required*		
		No	Yes	Basic		
			No	*Not required*		

Definitions

[1] Area of poor air quality - an area with NO_2 or PM10 concentrations within 5% below the air quality objective, 38µg/m3 (micrograms per cubic metre).

5.4.5 The proposed development is defined as a 'Minor' Scheme as it does not trigger the criteria of 10 dwellings or is no more than 1000 square metres of floorspace. Therefore, the scheme requires a Basic air quality

[7]LBoC (January 2021) Supplementary Planning Document (SPD) Air Quality, available at: https://www.camden.gov.uk/documents/20142/4823269/Air+Quality+CPG+Jan+2021.pdf/4d9138c0-6ed0-c1be-ce68-a9ebf61e8477?t=1611580574285

assessment.

5.5 Simple Air Quality Assessment

5.5.1 A basic assessment has been completed. From herein it is titled as a simple assessment for the purposes of this report. A simple assessment of air quality in terms of the impact of the development and suitability of the site, which relies on already published information, has been completed using sources such as the Local Authority's monitoring network and the Defra LAQM support tools.

5.6 Air Quality Neutral Assessment

5.6.1 The London Plan and the Mayor's Air Quality Strategy demand that developments are to be at least 'air quality neutral'. The methodology within the Greater London Authority Sustainable Design and Construction Supplementary Planning Guidance (July 2014) and London Plan Guidance Air Quality Neutral Consultation draft[8] (November 2021) have been used to complete the assessments of building and transport-related emissions.

5.6.2 To enable the implementation of this policy emission benchmarks have been produced for buildings' operation and transport across London based on the latest technology (including its effectiveness and viability). Developments that do not exceed these benchmarks will be considered to avoid any increase in NO_x and PM emissions across London as a whole and therefore be 'air quality neutral'. These are to be considered minimum benchmarks.

5.6.3 The London Plan states that new development proposals should meet the minimum standards outlined in the SPG. Emission standards are provided for: individual gas boilers; communal gas boilers; solid biomass boilers; and combined Heat and Power (CHP) plants. The emission standards are provided in Appendix 7 of the 2014 SPG and these are target minimum standards.

5.6.4 The policy applies to all major developments in Greater London. Developers have to calculate the NO_x and/or PM_{10} emissions from the buildings and transport elements of their developments and compare them to the benchmarks set out in Appendix 5 and 6 of the SPG. For smaller developments paragraphs 4.3.23 – 4.3.25 of the SPG set out emissions standards for combustion plants.

5.7 Air Quality Positive

5.7.1 The London Plan specifies the need for air quality assessment and planning submissions to consider air quality positive. The London Plan Guidance Air Quality Positive, March 2021, outlines the requirements of the air quality positive assessment. Section 2 of the document outlines how it should be applied:

- Planning application route – an Air Quality Positive Statement (a unique report separate from the air quality assessment) must be submitted with all Environmental Impact Assessment classification developments.
- Plan making route – an air quality statement is recommended which outlines how the planning and design has been influenced by the local air quality.

5.7.2 The proposed development does not require an EIA. As discussed in **Section 5.5**, a simple air quality

[8] https://www.london.gov.uk/sites/default/files/air_quality_neutral_lpg_-_consultation_draft_0.pdf

assessment is proposed to assess the impact of the proposed development and the impact of local air quality on the development; an air quality neutral assessment will also be undertaken.

6 Baseline Air Quality

6.1 Local Air Quality

6.1.1 Baseline air quality at the proposed development has been established by examining monitoring data produced by London Boroughs of Camden and bordering local authority of Islington (provided in the Annual Status Reports), LAEI data, and background concentration maps provided by Defra for the grid squares covering the proposed development.

6.1.2 The whole Borough of Camden has been declared an AQMA since 2002 for exceedances of NO_2 and PM_{10}.

6.2 Air Quality Monitoring

Nitrogen Dioxide (NO_2)

6.2.1 Results from the monitoring within the vicinity of the proposed development by London Boroughs of Camden and Islington are shown in **Table 4** and the monitor locations are shown in **Appendix A**. Monitoring data has been obtained from the LBoC and Islington 2020 Annual Status Reports.

Table 4: Annual Mean NO_2 Concentrations Monitored within the Study Area

Site ID	Location		Annual Mean NO_2 Concentrations (µg/m^3)				
			2017	2017	2018	2019	2020
CA4A (Kerbside)	530093	182792	-	-	-	69.06	52.40
CA28 (Urban Background)	530512	182511	-	-	-	27.67	21.93
CA6 (Urban Background)	530430	182430	31.31	34.83	26.67	24.65	-
BIS005/04 (Urban Background)	530921	182861	46	40	35	32	-
Annual Mean NO_2 air quality objective				**40 µg/m^3**			

6.2.2 The monitoring results in **Table 4** indicate that annual mean concentrations of NO_2 have been above the NO_2 annual mean objective at the kerbside location (CA4A) whereas below the NO_2 annual mean objective at the background locations within the vicinity.

6.2.3 The A-road is the main pollutant source in the vicinity of the site and the concentrations from primary pollutants, such as NO_2, decrease as the distance from the source increases, due to the dispersion of pollutants. The concentrations at the proposed development will be lower than those observed at the CA4A kerbside location as the proposed development is set back from the King's Cross Road (A201) with a set back distance of more than 17 m. All of these monitors are also located at ground level, whereas the proposed residential element of the development would be on the third floor (at a height of more than 8m)

6.2.4 The concentrations at the proposed development will be higher than those of the urban background due to its

proximity to the road network.

Particulate Matter (PM_{10} & $PM_{2.5}$)

6.2.5 LBoC does not undertake PM_{10} or $PM_{2.5}$ monitoring in the vicinity of the proposed development site, neither is there any nearby representative monitoring available.

6.3 Background Concentrations

6.3.1 There are a few NO_2 urban background monitors in the vicinity of the proposed development site as detailed in **Table 4** and shown in **Appendix A**.

6.3.2 Background concentrations of NO_2, PM_{10} and $PM_{2.5}$ obtained from the background concentration maps provided by Defra for the grid squares covering the proposed development and receptor locations[9] are shown in **Table 5**. The Defra background maps indicate the areas has higher NO_2 concentrations, when compared to the local monitoring data.

Table 5: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Site

Grid Square	Pollutant	2022 (µg/m³)
530500 , 182500	NO_2	35.51
	PM_{10}	19.28
	$PM_{2.5}$	12.25

** Background concentrations obtained from the latest 2018 based background maps*

6.4 LAEI Concentrations

6.4.1 The Greater London Authority and Transport for London fund, develop and maintain the London Atmospheric (LAEI)[10] database of geographically referenced datasets of pollutant emissions and sources in Greater London. This data is used by London Air[11] to create annual pollution maps at the ground-level 0m. The latest London Air maps available are for 2016 ground-level concentrations of annual mean NO_2, PM_{10} and $PM_{2.5}$ in µg/m³ at 20 m x 20 m grid square[12].

6.4.2 The NO_2, PM_{10}, and $PM_{2.5}$ roadside concentration maps from this resource indicate the 2016 concentrations at the ground level, 0m, at the proposed development were predicted to be as shown are shown in **Appendix E**. On average, pollutant concentrations have decreased within the London Borough of Camden since 2016

6.4.3 The NO_2 concentration is higher than the annual mean objective at 46 µg/m³, PM_{10} concentrations are below the annual mean objective and is predicted to be 25 µg/m³ and $PM_{2.5}$ concentrations are below the annual mean

[9] http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

[10] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2016

[11] https://www.londonair.org.uk/london/asp/annualmaps.asp

[12] https://www.londonair.org.uk/map-maker/

target is predicted to be 15 µg/m^3.

7 Construction Dust Impact Assessment

7.1 Step 1 – Requirement for a Detailed Assessment

7.1.1 There are sensitive receptors located within 350 m of the site boundary, therefore, a detailed assessment of the construction phase of the development has been undertaken. There are no ecological designations within 50m of the site boundary or trackout routes which require assessment.

Step 2 – Assess the Risk of Dust ImpactsStep 2A Dust Emission Magnitude

7.1.2 The potential dust emission magnitude in relation to the development has been determined using the criteria detailed in **Table B1** in **Appendix B**. As there is no demolition or earthworks proposed, they are not assessed further. The scale and nature of works onsite were considered to determine the potential dust emission magnitude for construction and trackout activities. Information to determine the classification has been estimated from the site plans, Google Earth and information provided by the Applicant. The dust emission magnitude is outlined in **Table 6.**

Table 6: Dust Emission Magnitudes for Each Activity

Activity	Dust Emission Magnitudes	Justification for Sensitivity Classification
Construction	Small	• total building volume to be constructed is < 25,000 m^3
Trackout	Small	• there are likely to be <10 HDV outward movements in any one day

Step 2B Sensitivity of the Receptors to Dust Soiling and Health Effects

7.1.3 Dwellings are located within a distance of 20 m from construction and 20 m of road edges used by traffic associated with the site construction In accordance with the criteria in **Table B2** in **Appendix B** and the IAQM guidance, the sensitivity of human receptors is **high**.

Step 2B Sensitivity of the Area to Dust Soiling and Human Health Effects of PM_{10}

7.1.4 The sensitivity of the area for dust soiling and human health effects has been determined using the criteria detailed in **Table B3 and Table B4** respectively in **Appendix B.**

7.1.5 The sensitivity of the area to dust soiling and human health for each activity is summarised in **Table 7**.

Table 7: Outcome of Defining the Sensitivity of the Area

Pollution	Activity	Sensitivity of the Surrounding Area	Justification for Sensitivity Classification
Dust Soiling	Demolition	NA	NA
	Earthworks	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary

Pollution	Activity	Sensitivity of the Surrounding Area	Justification for Sensitivity Classification
	Construction	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary
	Trackout	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary
Human Health	Demolition	NA	NA
	Earthworks	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary. Background pollutant concentrations are between 24 - 28 µg/m^3
	Construction	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary. Background pollutant concentrations are between 24 - 28 µg/m^3
	Trackout	High	There are 10 – 100 highly sensitive residential receptors within 20 m of the site boundary. Background pollutant concentrations are between 24 - 28 µg/m^3

Step 2C Risk of Impacts

7.1.6 The dust emission magnitude and sensitivity of the area were combined and the risk of impacts have been determined using the criteria detailed in **Table B5** to **Table B8** in **Appendix B.**

7.1.7 A summary of the risks, before mitigation measures are applied, for dust soiling and human health are shown in **Table 8**.

Table 8: Risk of Dust Impacts

Potential Impact	Dust Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	NA	NA	Low	Low
Human Health	NA	NA	Low	Low

7.2 Step 3 – Site-Specific Mitigation

7.2.1 Step 3 of the GLA guidance identifies appropriate site-specific mitigation. These measures are related to the site risk for each activity. Mitigation measures specific to earthworks, construction and trackout are proposed based on the risk classifications in **Table 8**. Recommended mitigation measures are shown in **Appendix D.**

7.2.2 There is no demolition or earthworks proposed and due to the nature of proposals, the site is classified as “low risk” for construction and trackout, therefore is does not require monitoring as per GLA Dust Assessment mitigation.

7.2.3 The dust management plan will include provisions for emission controls of Non-Road Mobile Machinery (NRMM).

7.3 Step 4 – Determine Significant Effects

7.3.1 The characteristics of the site and the surrounding area suggest that mitigation would not be impracticable or ineffective. With the implementation of the mitigation measures, therefore, the residual impacts from the construction are considered to be not significant when considered following GLA guidance.

8 Effect of Air Quality on the Proposed Development

8.1 The proposed development is for the extension at first floor for commercial space and addition of two additional residential units at the second floor. The short-term objectives apply at the first floor and the long-term objectives apply at the third floor. LAQM.TG(16) provides a qualitative screening approach to determine whether there is a risk of exceedance of the short-term (one-hour NO_2 air quality objective of 200 µg/m^3). If the ambient NO_2 annual mean concentration is above 60 µg/m^3, there is a risk that the one-hour objective may be exceeded.

8.2 The background concentrations in **Table 5** show that background concentrations of NO_2 and PM_{10} are below health-based air quality objectives of 40 µg/m^3 for both pollutants. However, the site is likely experiencing higher concentrations due to its proximity to the road network. The concentrations at the proposed development will be lower than those observed at the CA4A kerbside location as shown in **Table 4** as the proposed development is set back from the King's Cross Road (A201).

8.3 The LAEI maps in **Appendix E** show that the NO_2 concentrations at the proposed development are above the annual mean objective around 46 µg/m^3, PM_{10} concentrations are below the annual mean objective and is predicted to be 25 µg/m^3 and $PM_{2.5}$ concentrations are below the annual mean target is predicted to be 15 µg/m^3. However, these maps are based at 0 m height. The first floor has proposed commercial uses so it is unlikely that the short-term objectives will be exceeded.

8.4 The evidence from existing information sources is that the proposed development site is likely to experience levels of NO_2 and PM_{10} below the annual mean and short-term objectives for the pollutants and below the annual mean target for $PM_{2.5}$.

9 Impact of the Proposed Development on Existing Air Quality

9.1 TTP Consulting has been appointed as transport consultant to this project and advises that the development will generate an overall increase in 5 Annual Average Daily Traffic (AADT) with 20% HDV[13] as the scheme is car-free. Therefore, the impact of the traffic generated by the development will not be significant.

10 Air Quality Neutral Assessment

10.1 As the new heating system is a heat pump so the proposed development can be assumed to meet the Building Emission Benchmark (BEB).

10.2 As there is no parking proposed, the proposed development can be assumed to meet the Transport Emissions

[13] Email TTP Consulting to Miller Goodall Ltd. on 9 February 2021

Benchmark (TEB).

10.2.1 The air quality neutral policy applies to all major developments in Greater London, which is a development that is:

- For 10 or more residential dwellings (or where the number is not given, an area of more than 0.5 ha); or
- For all other uses, where the floor space is 1,000 sq m or more (or the site area is 1 ha or more).

10.2.2 The proposed development does not meet either criteria. An air quality neutral assessment has, therefore, been screened out. The proposed development can be described as 'neutral' given the scale of the proposals.

11 Summary of Impacts and Conclusion

11.1 This air quality report assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.

11.2 The assessment of dust soiling and human health impacts during the construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the construction phase are not significant.

11.3 Concentrations of NO_2 and PM_{10} are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable for residential/ commercial use with regards to air quality. Concentrations of $PM_{2.5}$ are expected to be below the annual mean target.

11.4 The proposed development is not expected to have a significant impact on local air quality.

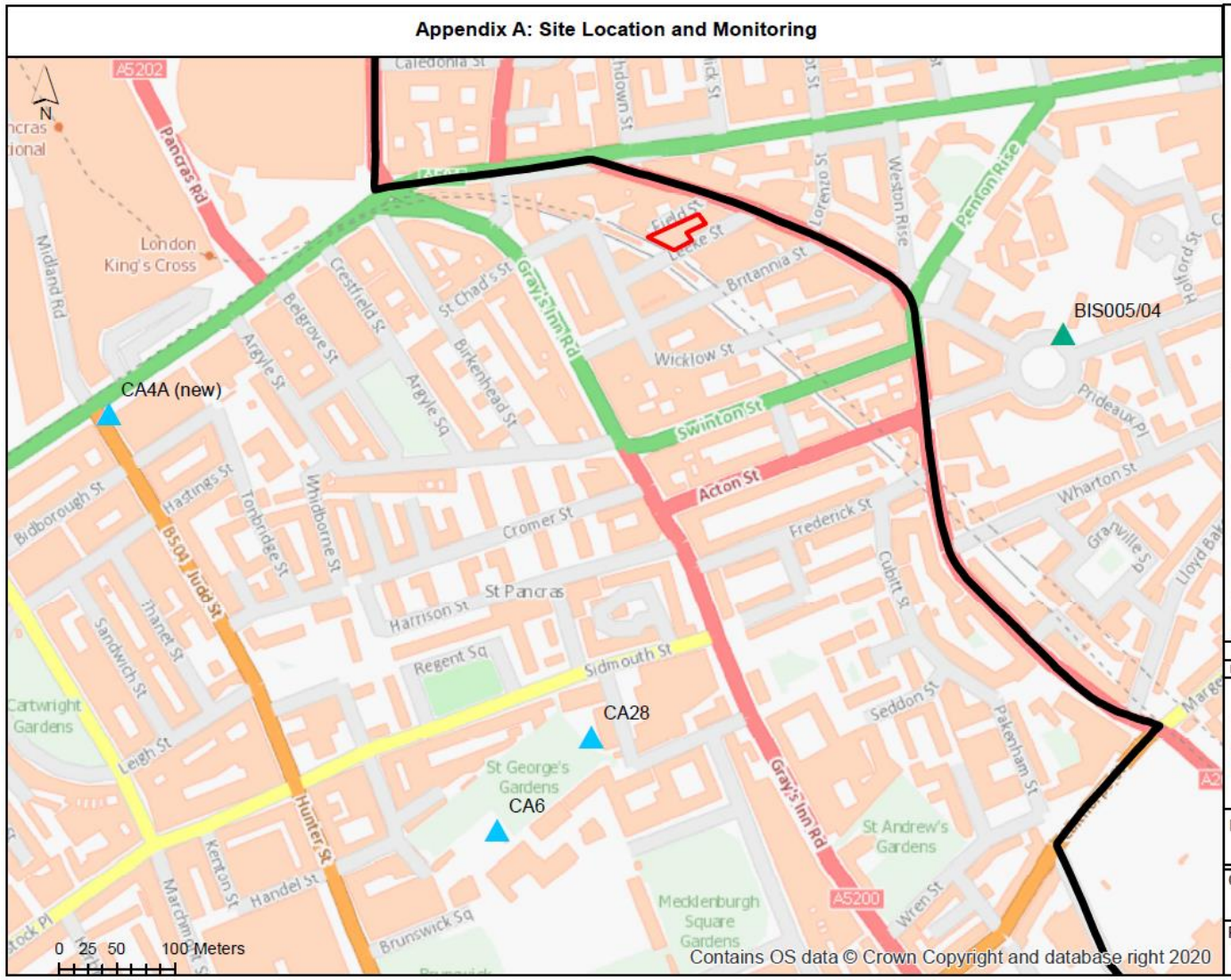
11.5 An air quality neutral assessment has also been undertaken. The assessment concluded that the proposed development will be neutral in terms of building and transport emissions.

11.6 There is, therefore, no reason for this application to be refused on the grounds of air quality.

APPENDICES

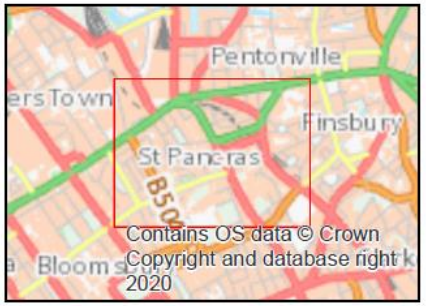
This page is left blank intentionally

Appendix A: Site Location and Monitoring



Legend

- LA Boundary
- Red Line Boundary
- Islington Monitoring
- Camden Monitoring



Rev.	Date	Purpose of revision	Drawn By	Approved By
1	11/02/2022	Initial Issue	UE	LG

MILLER GOODALL
ACOUSTICS AND AIR QUALITY

Project: 1-6 Field Street and 14-16 Leeke Street London WC1X 9DG

Client: PPF Nominee 1 Ltd and PF Nominee 2 Ltd

Report Number: 102759

Scale @ A4: 1:5,783

This page is left blank intentionally

Appendix B: GLA Dust Risk Assessment Methodology

The following section outlines criteria developed by the GLA[6] for the assessment of air quality impacts arising from construction and demolition activities. The assessment procedure is divided into four steps and is summarised below:

Step 1: Screen the Need for a Detailed Assessment

An assessment will normally be required where there are human receptors within 350 m of the site boundary and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s). Ecological receptors within 50 m of the site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s), are also identified at this stage. An ecological receptor refers to any sensitive habitat affected by dust soiling. For locations with a statutory designation, such as a Site of Specific Scientific Interest (SSSI), Special Area of Conservation (SACs) and Special Protection Areas (SPAs), consideration should be given as to whether the particular site is sensitive to dust. Some non-statutory sites may also be considered if appropriate.

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is 'negligible' and any effects will not be significant.

Step 2: Assess the Risk of Dust Impacts

In step two, a site is allocated to a risk category on the basis of the scale and nature of the works (Step 2A) and the sensitivity of the area to dust impacts (Step 2B). These two factors are combined in Step 2C to determine the risk of dust impacts before the implementation of mitigation measures. The assigned risk categories may be different for each of the construction activities outlined by the GLA (construction, demolition, earthworks and trackout). A site can be divided into zones, for example on a large site where there are differing distances to the nearest receptors.

Step 2A: Define the Potential Dust Emission Magnitude

Dust emission magnitude is based on the scale of the anticipated works and is classified as Small, Medium or Large. The GLA guidance recommends that the dust emission magnitude is determined separately for demolition, earthworks, construction and trackout. **Table B1** describes the potential dust emission class criteria for each outlined activity.

Table B1: Criteria Used in the Determination of Dust Emission Magnitude

Activity	Criteria used to Determine Dust Emission Magnitude		
	Small	Medium	Large
Demolition	Total building volume <20,000 m^3, construction materials with low potential for dust release.	Total building volume 20,000 m^3 – 50,000 m^3, potential dusty construction material.	Total building volume >50,000 m^3, potentially dusty construction material.
Earthworks	Total site area <2,500 m^2, soil type with large grain	Total site area 2,500 – 10,000 m^2, moderately dusty soil type	Total site area >10,000 m^2, potentially dusty soil type
Construction	Total building volume <25,000 m^3.	Total building volume 25,000 – 100,000 m^3.	Total building volume >100,000 m^3.

Activity	Criteria used to Determine Dust Emission Magnitude		
	Small	Medium	Large
Trackout	<10 outward HDV trips in any one day. Unpaved road length <50 m.	10-50 outward HDV trips in any one day. Unpaved road length 50-100 m.	>50 outward HDV trips in any one day. Unpaved road length >100 m.

Step 2B: Define the Sensitivity of the Area

The sensitivity of the area takes into account the following factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of receptors;
- the local background PM_{10} concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of windblown dust.

The criteria detailed in **Table B2** is used to determine the sensitivity of the receptor in relation to dust soiling, health effects and ecological effects.

Table B2: Criteria for Determining Sensitivity of Receptors

Sensitivity of Receptor	Criteria for Determining Sensitivity		
	Dust Soiling Effects	Health Effects of PM_{10}	Ecological Sites
High	Dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms	Residential properties, hospitals, schools and residential care homes	International or national designation *and* the features may be affected by dust soiling
Medium	Parks, places of work	Office and shop workers not occupationally exposed to PM_{10}	Presence of an important plant species where dust sensitivity is uncertain or locations with a national designation with features that may be affected by dust deposition
Low	Playing fields, farmland, footpaths, short-term car parks and roads	Public footpaths, playing fields, parks and shopping streets	Local designation where features may be affected by dust deposition

Table B3 and **Table B4** are then used to define the sensitivity of the area to dust soiling and human health effects. This should be derived for each of construction, demolition, earthworks and trackout.

Table B3: Sensitivity of the Area to Dust Soiling Effects on People and Property.

Receptor Sensitivity	Number of Receptors	Distance from Source (m)*			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low

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

*distances considered are to the dust source

Table B4: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentrations	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32 µg/m^3	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	-	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

The sensitivity of the area is then summarised.

Step 2C Define the Risks of Impacts

The dust emission magnitude from **Table B1** and sensitivity of the area and receptors from **Table B2**, **Table B3** and **Table B4** are combined, and the risk of impacts from each activity (demolition, earthworks, construction and trackout) before mitigation is applied, is determined using the criteria detailed in **Table B5** to **Table B8.**

Table B5: Risk of Dust Impacts - Demolition

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B6: Risk of Dust Impacts- Earthworks

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B7: Risk of Dust Impacts- Construction

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B8: Risk of Dust Impacts- Trackout

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Step 3 Determine Site Specific Mitigation

Step three of the GLA guidance identifies appropriate site-specific mitigation. These measures are related to whether the site is a low, medium or high risk site.

Step 4 Determine Significance of Residual Effects

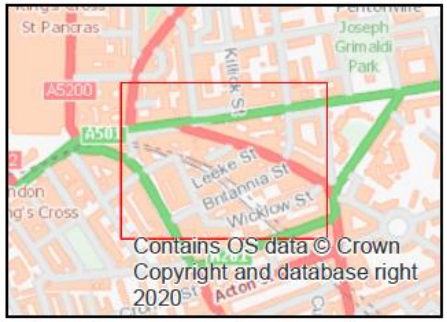
At step four the significance of residual effects is assessed. For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'. There may be cases where, for example, there is inadequate access to water for dust suppression to be effective, and even with other mitigation measures in place there may be a significant effect. Therefore, it is important to consider the specific characteristics of the site and the surrounding area to ensure that a conclusion of no significant effect is robust.

This page is left blank intentionally

Appendix C: Construction Dust Buffer

Legend

- Red Line Boundary
- <20 m
- 20 m - 50 m
- 50 m - 100 m



Rev.	Date	Purpose of revision	Drawn By	Approved By
1	11/02/2022	Initial Issue	UE	LG

MILLER GOODALL
ACOUSTICS AND AIR QUALITY

Project: 1-6 Field Street and 14-16 Leeke Street London WC1X 9DG

Client: PPF Nominee 1 Ltd and PF Nominee 2 Ltd

Report Number: 102759

Scale @ A4: 1:2,000

This page is left blank intentionally

Appendix D: GLA Dust Assessment Mitigation

xx Highly Recommended **x Desirable**

Measures relevant for construction and trackout.

MITIGATION MEASURE	Low Risk
Site management	
Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.	XX
Display the head or regional office contact information.	XX
Record and respond to all dust and air quality pollutant emissions complaints.	XX
Make a complaints log available to the local authority when asked.	XX
Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.	XX
Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.	XX
Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.	XX
Preparing and maintaining the site	
Plan site layout: machinery and dust causing activities should be located away from receptors.	XX

MITIGATION MEASURE	Low Risk
Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.	XX
Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	X
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution.	
Avoid site runoff of water or mud.	XX
Keep site fencing, barriers and scaffolding clean using wet methods.	X
Remove materials from site as soon as possible.	X
Operating vehicle/machinery and sustainable travel	
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.	XX
Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance.	XX
Ensure all vehicles switch off engines when stationary – no idling vehicles.	XX
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.	XX
Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes 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).	X

MITIGATION MEASURE	Low Risk
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	XX
Operations	
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.	XX
Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).	XX
Use enclosed chutes, conveyors and covered skips.	XX
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	XX
Waste management	
Reuse and recycle waste to reduce dust from waste materials	XX
Avoid bonfires and burning of waste materials.	XX

Measures specific to construction.

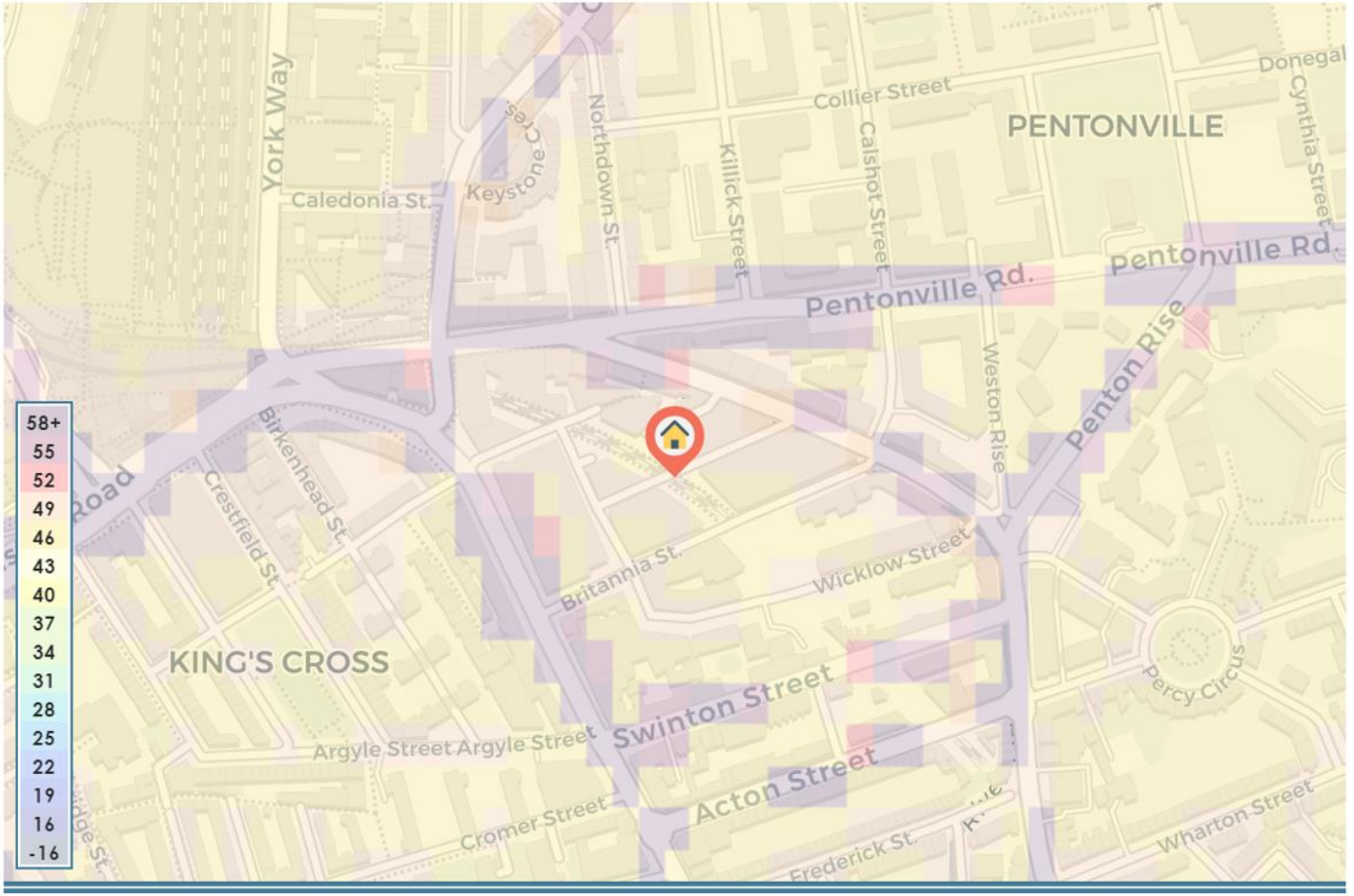
MITIGATION MEASURE	Low Risk
Avoid scabbling (roughening of concrete surfaces) if possible	X
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place	X

Measures specific to trackout.

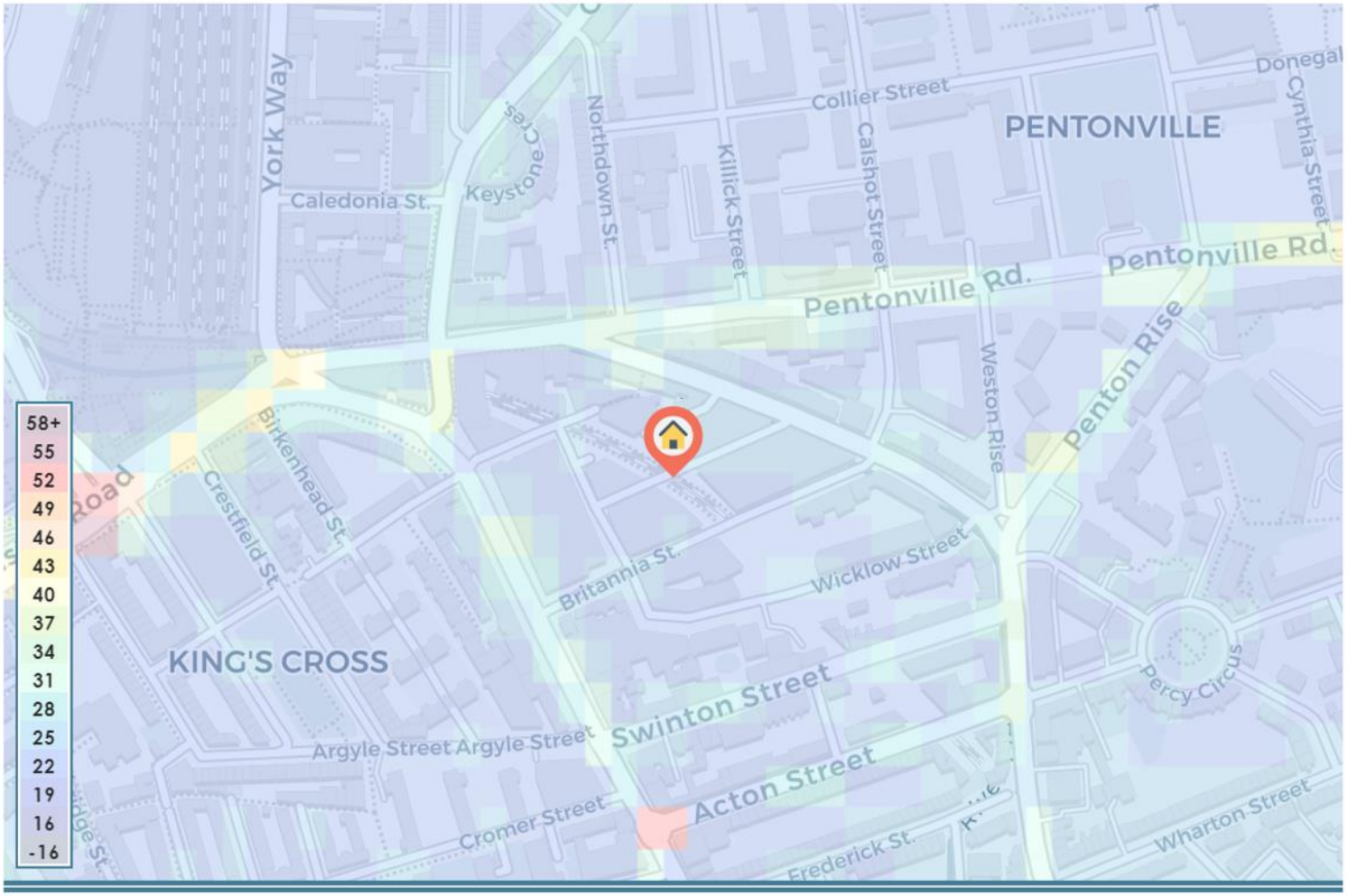
MITIGATION MEASURE	Low Risk
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.	X
Avoid dry sweeping of large areas.	X
Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	X
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	X

This page is left blank intentionally

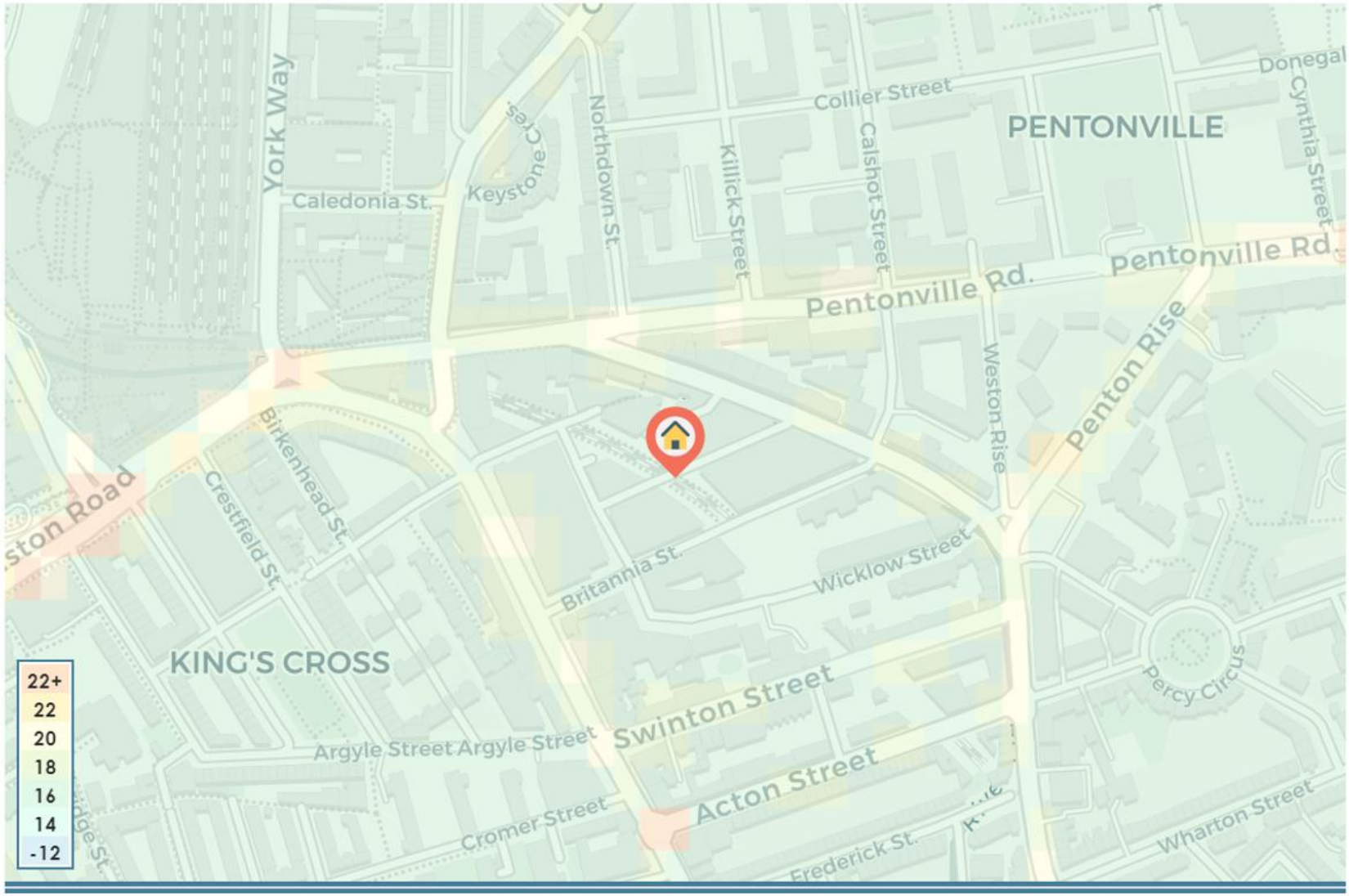
Appendix E: London Air Pollution Maps for Proposed Development Site



Nitrogen Dioxide (µg/m³) - Camden, WC1X 9DG



PM10 Particulates (µg/m³) - Camden, WC1X 9DG



PM2.5 Particulates (µg/m³) - Camden, WC1X 9DG

This page is left blank intentionally

Glossary of Terms

AADT Annual Average Daily Traffic flow

Air Quality Standard Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health and the environment

Air Quality Objective Pollutant Objectives incorporate future dates by which a standard is to be achieved, taking into account economic considerations, practicability and technical feasibility

Annual Mean A mean pollutant concentration value in air which is calculated on a yearly basis, yielding one annual mean per calendar year. In the UK air quality regulations, the annual mean for a particular substance at a particular location for a particular calendar year is:

(a) in the case of lead, the mean of the daily levels for that year;

(b) in the case of nitrogen dioxide, the mean of the hourly means for that year;

(c) in the case of PM_{10}, the mean of the 24-hour means for that year.

Annoyance (Dust) Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance.

AQAP Air Quality Action Plan

AQEG Air Quality Expert Group

AQMA Air Quality Management Area

AQMP Air Quality Management Plan

AQO Air Quality Objective

AQS Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Background Concentrations The term used to describe pollutant concentrations which exist in the ambient atmosphere, excluding local pollution sources such as roads and stacks

Construction Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc.

Construction Impact Assessment An assessment of the impacts of demolition, earthworks, construction and trackout. In this Guidance, specifically the air quality impacts.

Defra Department for Environment, Food and Rural Affairs

Demolition Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time.

Deposited Dust that is no longer in the air and which has settled onto a surface. Deposited dust is also sometimes called amenity dust or nuisance dust, with the term nuisance applied in the general sense rather than the specific legal definition.

DMP Dust Management Plan; a document that describes the site-specific methods to be used to control dust emissions.

Dust Solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. The terms dust and particulate matter (PM) are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance the term 'dust' has been used to include the particles that give rise to soiling, and to other human health and ecological effects. Note: this is different to the definition given in BS 6069, where dust refers to particles up to 75 µm in diameter.

Earthworks Covers the processes of soil-stripping, ground-levelling, excavation and landscaping.

Effects The consequences of the changes in airborne concentration and/or dust deposition for a receptor. These might manifest as annoyance due to soiling, increased morbidity or morality due to exposure to PM_{10} or $PM_{2.5}$ or plant dieback due to reduced photosynthesis. The term 'significant effect' has a specific meaning in EIA regulations. The opposite is an insignificant effect. In the context of construction impacts any effect will usually be adverse, however, professional judgement is required to determine whether this adverse effect is significant based in the evidence presented.

EPUK Environmental Protection UK

HDV Heavy Duty Vehicle

Impacts The changes in airborne concentrations and/or dust deposition. A scheme can have an 'impact' on airborne dust without having any 'effects', for instance if there are no receptors to experience the impact.

LAQM Local Air Quality Management

LDV Light Duty Vehicle

Mg/m^3 Microgrammes (of pollutant) per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m^3 means that one cubic metre of air contains one microgramme (millionth of a gramme) of pollutant

NO_2 Nitrogen Dioxide

NOx A collective term used to represent the mixture of nitrogen oxides in the atmosphere, as nitric oxide (NO) and nitrogen dioxide (NO_2)

NPPF National Planning Policy Framework

Nuisance The term nuisance dust is often used in a general sense when describing amenity dust. However, this term also has specific meanings in environmental law:

Statutory nuisance, as defined in S79(1) of the Environmental Protection Act 1990 (as amended from time to time).

Private nuisance, arising from substantial interference with a person's enjoyment and us of his land.

Public nuisance, arising from and act or omission that obstructs, damages or inconveniences the right of the community.

Each of these applying in so far as the nuisance relates to the unacceptable effects of emissions. It is recognised that a significant loss of amenity may occur at lower levels of emission than would constitute a statutory nuisance.

Note: as nuisance has a specific meaning in environmental law, and to avoid confusion, it is recommended that the term is not used in a more general sense.

$PM_{2.5}$ The fraction of particles with a mean aerodynamic diameter equal to, or less than, 2.5 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of $PM_{2.5}$, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter

PM_{10} The fraction of particles with a mean aerodynamic diameter equal to, or less than, 10 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM_{10}, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter

Running Annual Mean A mean pollutant concentration value in air which is calculated on an hourly basis, yielding one running annual mean per hour. The running annual mean for a particular substance at a particular location for a particular hour is the mean of the hourly levels for that substance at that location for that hour and the preceding 8759 hours

Trackout The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction/demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.


MILLER GOODALL
ACOUSTICS AND AIR QUALITY

KP Acoustics Ltd.
info@kpacoustics.com
1 Galena Road, W6 0LT London, UK
+44 (0) 208 222 8778
www.kpacoustics.com

1-6 Field Street and 14-16 Leeke Street London

Noise and Vibration Impact Assessment Report
Report 22784.NVA.01

PPF Real Estate Nominee 1 Ltd and PPF Real Estate Nominee 2 Ltd
c/o CBRE Global Investors
One New Change
London
EC4M 9AF

Report 22784.NVA.01 Revision History			
First Issue Date: 24/06/2021			
A		D	
B		E	
C		F	

Written by:	Checked by:	Approved by:
Marie Gauthier AMIOA Acoustic Consultant	**Aidan Tolkien MIOA** Senior Acoustic Consultant	**Kyriakos Papanagiotou MIOA** Managing Director

KP acoustics

Contents

SUMMARY 1

1.0 INTRODUCTION 2

2.0 SITE SURVEYS 2

2.1 Site Description 2

2.2 Environmental Noise Survey Procedure 2

2.3 Vibration Survey Procedure 2

2.4 Measurement Locations 4

2.5 Equipment 5

3.0 RESULTS 6

3.1 Noise Survey 6

3.2 Vibration Survey 6

4.0 NOISE AND VIBRATION ASSESSMENT GUIDANCE 7

4.1 Noise Policy Statement For England 2019 7

4.2 BS8233:2014 8

4.3 WHO Guidelines for Community Noise (1999) 9

4.4 ANC Residential Design Guide to Acoustics, Ventilation and Overheating 9

4.5 BS6472-1-2008 - Vibration Assessment 13

5.0 EXTERNAL BUILDING FABRIC SPECIFICATION 14

5.1 Non-Glazed Elements 14

5.2 Glazed Elements 14

6.0 VENTILATION AND OVERHEATING 17

6.1 Ventilation Strategy 17

6.2 Overheating Control Strategy 17

7.0 VIBRATION ASSESSMENT 19

8.0 EXTERNAL AMENITY AREA ASSESSMENT 20

9.0 CONCLUSION 20

List of Attachments

22784. TH1-2	Environmental Noise Time Histories
22784.VH1	Vibration Time History
Appendix A	Glossary of Acoustics Terminology

SUMMARY

KP Acoustics Ltd has been commissioned to assess the suitability of the site at 1-6 Field Street And 14-16 Leeke Street, London, WC1X 9JF for an office and residential development in accordance with the provisions of the National Planning Policy Framework and the Noise Policy Statement for England (NPSE).

An environmental noise survey has been undertaken on site in order to establish the current ambient noise levels, as shown in Table 3.1.

Sound reduction performance calculations have been undertaken in order to specify the minimum performance required from glazed elements in order to meet the requirements of BS8233:2014, taking into consideration the non-glazed external building fabric elements. The results of these calculations and the sound reduction performance requirements for the glazed elements are shown in Table 5.2.

The noise implications of the ventilation strategy have been considered, with options being provided to ensure that the ventilation requirements of Approved Document F are achieved.

Further advice can be provided with regards to the overheating strategy to assess the noise implications once thermal modelling calculations have been undertaken.

Noise levels within external amenity areas would be expected to meet the recommended levels provided within BS8233:2014, providing mitigations are being implemented.

No further mitigation measures should be required in order to protect the proposed habitable spaces from external noise intrusion.

1.0 INTRODUCTION

KP Acoustics Ltd has been commissioned by PPF Real Estate Nominee 1 Ltd and PPF Real Estate Nominee 2 Ltd, c/o CBRE Global Investors, One New Change, London, EC4M 9AF, to assess the suitability of the site at 1-6 Field Street And 14-16 Leeke Street, London, WC1X 9JF for a residential development in accordance with the provisions of the National Planning Policy Framework and the Noise Policy Statement for England (NPSE).

This report presents the results of the environmental survey undertaken in order to measure prevailing background noise and vibration levels and outlines any necessary mitigation measures.

2.0 SITE SURVEYS

2.1 Site Description

The site is bounded by residential properties to the north, to the west and to the south, and London Underground railway tracks to the east. Entrance to the site is located on Field Street. At the time of the survey, the background noise climate was dominated by road and rail traffic noise from King's Cross Road and the the neighbouring London Underground railway tracks.

2.2 Environmental Noise Survey Procedure

Two noise surveys were undertaken on the proposed site as shown in Figure 2.1. The locations were chosen in order to collect data representative of the worst-case levels expected on the site due to all nearby sources.

Continuous automated monitoring was undertaken for the duration of the survey between 11:55 on 11/06/2021 and 12:03 on 14/06/2021.

Weather conditions were generally dry with light winds and therefore suitable for the measurement of environmental noise. The measurement procedure complied with ISO 1996-2:2017 Acoustics '*Description, measurement and assessment of environmental noise - Part 2: Determination of environmental noise levels*'.

2.3 Vibration Survey Procedure

Vibration Survey Procedure

Continuous automated vibration monitoring was undertaken in conjunction with the noise survey between 12:39 on 11/06/2021 and 11:45 on 14/06/2021 on First Floor level at the position shown in Figure 2.1. Measurements were made of vertical (z-axis) and horizontal (x - y axes) vibration dose value levels.

This survey addressed underground rail traffic vibration from the nearby railways. The character of the vibration would be considered to be intermittent.

The vibration monitoring position was chosen in order to capture worst case expected levels of vibration as stated within BS6472-1:2008 *''Guide to evaluation of human exposure to vibration in buildings''.*

Manual Measurement Procedure

Manual vibration measurements of vertical (z-axis) and horizontal (x - y axes) VDV levels were undertaken on site between 11:58 and 12:29 on 14/06/2021 on Ground Floor level, at the position shown in Figure 2.1.

This survey addressed underground rail traffic vibration from the nearby railways. Measurements were undertaken for several train pass-bys in each direction in order to gain an understanding of vibration levels typical on site. The character of the vibration would be considered to be intermittent.

The vibration monitoring position was chosen in order to capture worst case expected levels of vibration as stated within BS6472-1:2008 *''Guide to evaluation of human exposure to vibration in buildings''.*

2.4 Measurement Locations

Measurement positions are as described within Table 2.1 and shown within Figure 2.1.

Icon	Descriptor	Location Description
	Noise Measurement Position 1	The meter was installed on the rooftop of the North West façade, in direct line of sight with King's Cross Road in-free field conditions.
	Noise Measurement Position 2	The meter was installed on the rooftop of the East façade, in direct line of sight with the railways services in-free field conditions.
	Attended Vibration Measurement Position	The accelerometer was installed adjacent to the building on the ground-floor of the North East façade adjoining the nearby railway tracks on a steel cube and attached with manufacturer issued mounting wax.
	Unattended Vibration Measurement Position	The accelerometer was installed on the edge of the first-floor balcony from the East façade adjoining the nearby railway tracks on a steel cube and attached with manufacturer issued mounting wax.

Table 2.1 Measurement positions and descriptions

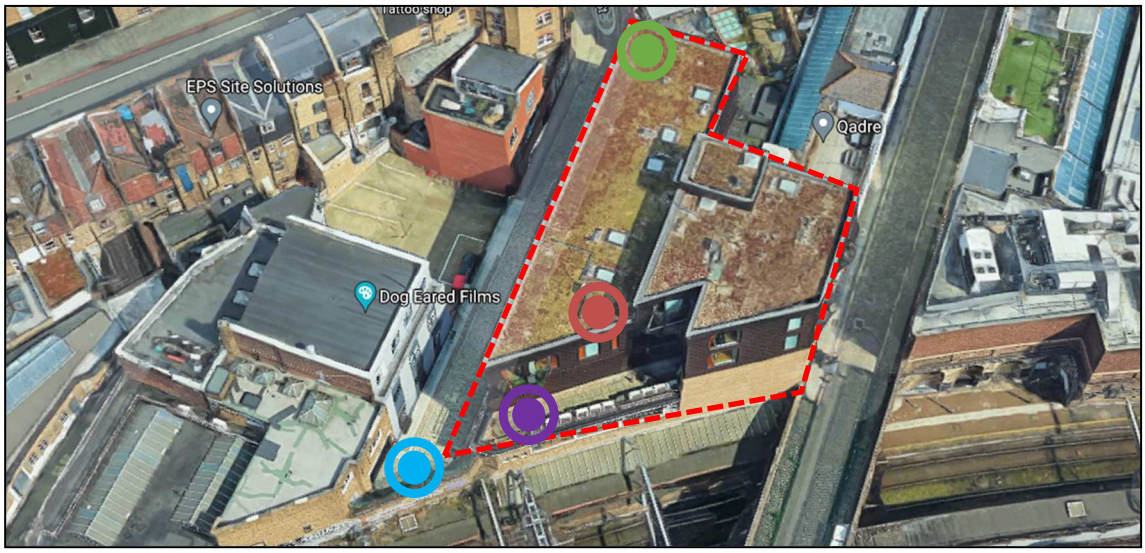


Figure 2.1 Site measurement positions (Image Source: Google Maps)

2.5 Equipment

The equipment calibration was verified before and after use and no abnormalities were observed. The equipment used is described within Table 2.2.

Measurement instrumentation		Serial no.	Date	Cert no.
Noise Kit 3	Svantek Type 977 Class 1 Sound Level Meter	34104	12/03/2020	14015015-2
	Free-field microphone Aco Pacific 7052E	66830		
	Preamp Svantek 2v12L	17293		
	Svantek External windshield	-	-	-
Noise Kit 4	Svantek Type 977B Class 1 Sound Level Meter	36453	27/02/2020	14015014-1
	Free-field microphone Aco Pacific 7052E	54143		
	Preamp Svantek 2v12L	41508		
	Svantek External windshield	-	-	-
Noise & Vibration Kit 3	Svantek Type 958 Class 1 Sound Level Meter	59558	04/10/2019	14012955-
PCB Piezotronics 356B18 Triaxial Accelerometer		LW176243	29/01/2020	14014834-2
Larson Davis CAL200 Class 1 Calibrator		17148	27/04/2021	05223/1

Table 2.2 Measurement instrumentation

3.0 RESULTS

3.1 Noise Survey

The $L_{Aeq:\ 5min}$, $L_{Amax:\ 5min}$, $L_{A10:\ 5min}$ and $L_{A90:\ 5min}$ acoustic parameters were measured throughout the duration of the survey. Measured levels are shown as a time history in Figure 22784.TH1-1 and in Figure 22784.TH1-2. Average daytime and night time noise levels are shown in Table 3.1.

Measured noise levels are representative of noise exposure levels expected to be experienced by all facades of the proposed development, and are shown in Table 3.1.

Time Period	Noise Measurement Position 1 (Measured Noise level – dBA)	Noise Measurement Position 2 (Measured Noise level – dBA)
Daytime $L_{Aeq,16hour}$	74	58
Night-time $L_{Aeq,8hour}$	69	55

Table 3.1 Site average noise levels for daytime and night time

3.2 Vibration Survey

Vibration Survey Procedure

The results of the vibration measurements captured during the automated survey period are shown as a time history in Figure 22787.VH1 as VDV levels over the full survey period.

Manual Measurement Survey Procedure

Table 3.2 provides typical VDV throughout the day from the 30min attended measurement from ground floor level. The data presented is the W_b weighted VDV level on the horizontal (x - y) axes, and W_d weighted VDV levels on the vertical (z-axis).

Measurement Type	W_d Weighted x-axis VDV mm/s$^{-1.75}$	W_d Weighted y-axis VDV mm/s$^{-1.75}$	W_b Weighted z-axis VDV mm/s$^{-1.75}$
Train Pass-by	0.33	0.26	0.05

Table 3.2 VDV levels measured on site

Note that approximately 30 individual train pass-bys occurred within the 30-minute measurements period, which is deemed representative for the full daytime period.

4.0 NOISE AND VIBRATION ASSESSMENT GUIDANCE

4.1 Noise Policy Statement For England 2019

The National Planning Policy Framework (NPPF) has superseded and replaces Planning Policy Guidance Note 24 (PPG24), which previously covered issues relating to noise and planning in England. Paragraph 170 of the NPPF states that planning policies and decisions should aim to:

- 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

In addition, Paragraph 180 of the NPPF states that '*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should':*

- Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason

The Noise Policy Statement for England (NPSE) was developed by DEFRA and published in March 2010 with the aim to 'Promote good health and good quality of life through the effective management of noise within the context of Government policy on sustainable development.'

Noise Policy Statement England (NPSE) noise policy aims are as follows:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

- *Avoid significant adverse impacts on health and quality of life;*
- *Mitigate and minimise adverse impacts on health and quality of life; and*
- *Where possible, contribute to the improvement of health and quality of life*

The Noise Policy Statement England (NPSE) outlines observed effect levels relating to the above, as follows:

- NOEL – No Observed Effect Level
    - This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.
- LOAEL – Lowest Observed Adverse Effect Level
    - This is the level above which adverse effects on health and quality of life can be detected.
- SOAEL – Significant Observed Adverse Effect Level
    - This is the level above which significant adverse effects on health and quality of life occur.

As stated in The Noise Policy Statement England (NPSE), it is not currently possible to have a single objective based measure that defines SOAEL that is applicable to all sources of noise in all situations. Specific noise levels are not stated within the guidance for this reason, and allow flexibility in the policy until further guidance is available.

4.2 BS8233:2014

BS8233:2014 *'Sound insulation and noise reduction for buildings'* describes recommended internal noise levels for residential spaces. These levels are shown in Table 4.1.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Rooms	35 dB(A)	-
Dining	Dining Room/area	40 dB(A)	-
Sleeping (daytime resting)	Bedrooms	35 dB(A)	30 dB(A)

Table 4.1 BS8233 recommended internal background noise levels

It should be noted that the recommended internal noise levels outlined above are not applicable under "purge ventilation" conditions as defined by Approved Document F of the Building Regulations, as this should only occur occasionally (E.G. to remove odour from painting or burnt food). However, the levels above should be achieved whilst providing sufficient background ventilation, either via passive or mechanical methods.

The external building fabric would need to be carefully designed to achieve these recommended internal levels.

In addition to guidance on internal levels, BS8233:2014 also states the following with regards to noise within external amenity spaces:

'For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$, which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.'

As outlined above, the resulting noise levels in external amenity areas should not be a reason for refusal, providing that the noise levels are designed to be as low as practically possible within external amenity areas.

Expected levels within the proposed external amenity areas are outlined in Section 8.0 in more detail.

4.3 WHO Guidelines for Community Noise (1999)

WHO Guidelines for Community Noise (1999) recommends that internal noise levels for individual events should not exceed 45dB L_{Amax} more than 10-15 times per night.

It should be noted that this impact is increasingly being regarded as 'LOAEL' for this number of exceedances, as described in Section 4.1.

The external building fabric would need to be carefully designed to ensure that the above guidance is achieved.

4.4 ANC Residential Design Guide to Acoustics, Ventilation and Overheating

The ANC guide to acoustics, ventilation and overheating provides an integrated approach to achieving good acoustic design with the ventilation requirements of Approved Document F of the Building Regulations and consideration for overheating control. This good practice document recognises the interdependence of ventilation and overheating when assessing noise, and provides a methodology for assessing the noise implications surrounding ventilation and overheating control.

Ventilation

The ANC Guide to Acoustics, Ventilation and Overheating states the following with regards to ventilation:

'It is important to differentiate between the need to provide 'purge ventilation' as required occasionally under Part F, which applies to all building types, in all locations and throughout the year; against the need to provide ventilation for the 'overheating condition' which is influenced by the location, orientation, type and design of the building and may be required for sustained periods of time, or not at all, depending on the overheating risk…

Approved Document F outlines the three main types of ventilation as whole house ventilation (continuous ventilation of rooms or spaces at a relatively low rate to dilute and remove pollutants and water vapour), extract ventilation (typically for kitchens or bathrooms), and purge ventilation (manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants and / or water vapour, provided by natural or mechanical means).

It also provides four template systems which can be adopted to demonstrate compliance with the Building Regulations, which are outlined in Table 4.2 below.

Ventilation System	Provision with ADF System / Purpose		
	Whole Dwelling Ventilation	**Extract Ventilation**	**Purge Ventilation**
System 1 – Trickle vents & intermittent extract fans	Trickle vents	Intermittent extract fans	Typically provided by opening windows
System 2 – Passive stack	Trickle vents and passive stack ventilation	Continuous via passive stack	Typically provided by opening windows
System 3 – Cont. mechanical extract (MEV)	Continuous mechanical extract – min. low rate Trickle vents for inlet air	Continuous mechanical extract – min. high rate Trickle vents for inlet air	Typically provided by opening windows
System 4 – Cont. mechanical supply & extract with heat recovery (MEV)	Continuous mechanical supply and extract – min. low rate	Continuous mechanical supply and extract – min. high rate	Typically provided by opening windows

Table 4.2 ADF template systems

Overheating

Overheating is a serious concern within residential developments as there is currently no requirement for overheating prevention within the Building Regulations.

The ANC Guide to Acoustics, Ventilation and Overheating states the following with regards to overheating:

'Developments will normally (but not always) require additional ventilation (above ADF whole dwelling ventilation provisions) in order to mitigate overheating. Where an overheating assessment is undertaken, it should provide details as to the duration and rate of any additional ventilation required to meet overheating compliance criteria. Where this additional ventilation is provided passively, the overheating assessment should also provide information about the required size of façade openings.'

It should be noted that the main differentiation between ventilation and overheating control is that the ventilation conditions prescribed by Approved Document F are applicable all of the time, whilst the overheating component applies only part of the time (to be defined by an overheating assessment for the scheme, if appropriate).

It is important to note that the recommended internal noise levels shown in Table 4.1 should be achieved whilst providing adequate ventilation (as outlined by Approved Document F), but the overheating condition should allow a relaxed standard internal sound environment, as follows:

'…it is considered reasonable to allow higher levels of internal ambient noise from transport sources when higher rates of ventilation are required in relation to the overheating condition'.

The rationale behind this is that the overheating condition would only apply for a relatively short period of time, and residential occupants would typically accept higher acoustic conditions internally whilst having control over thermal comfort within their property.

Table 4.3 below provides guidance for the assessment of the overheating condition.

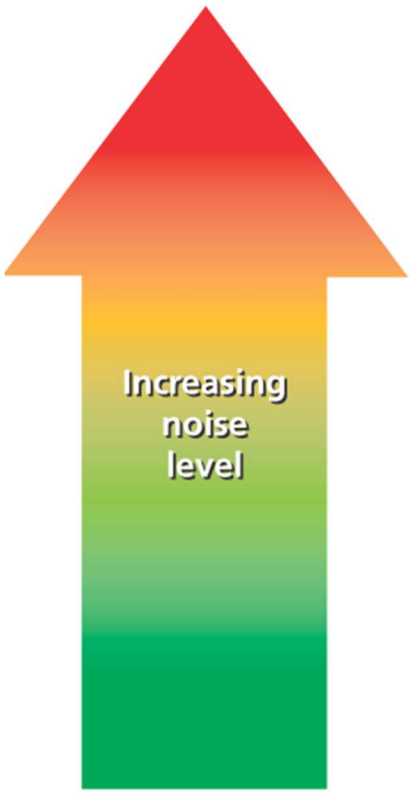
Internal Ambient Noise Level			Examples of Outcomes	
$L_{Aeq,T}$ during 07:00-23:00	**$L_{Aeq,T}$ during 23:00-07:00**	**Individual noise events during 23:00-07:00**		
> 50dB	> 42dB	Normally exceeds 65dB $L_{AF,max}$	The noise causes a material change in behaviour e.g. having to keep windows closed most of the time	Avoiding certain activities during periods of intrusion. Having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.
			Increasing likelihood of impact on reliable speech communication during the day or sleep disturbance at night	At higher noise levels, more significant behavioural change is expected and may only be considered suitable if occurring for limited periods. As noise levels increase, small behaviour changes are expected e.g. turning up the volume on the television; speaking a little more loudly; having to close windows for certain activities, for example ones which require a high level of concentration. Potential for some reported sleep disturbance. Affects the acoustic environment inside the dwelling such that there is a perceived change in quality of life. At lower noise levels, limited behavioural change is expected unless conditions are prevalent for most of the time.
≤35dB	≤30dB	Do not normally exceed $L_{AF,max}$ 45dB more than 10 times per night	Noise can be heard but does not cause any change in behaviour.	Noise can be heard but does not cause any change in behavior, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.

Table 4.3 Guidance for assessment of noise from transportation noise sources relating to overheating condition (Ref: Table 3.3 of AVO Guide)

It should be noted that the ANC guide to acoustics, ventilation and overheating document is not an official government code of practice, and neither replaces nor provides an authoritative interpretation of the law or government policy, and therefore should be seen as a good practice document only.

4.5 BS6472-1-2008 - Vibration Assessment

BS 6472 provides guidance on predicting human response to vibration in buildings over the frequency range 0.5 Hz to 80 Hz. The vibration dose value is used to estimate the probability of adverse comment which might be expected from human beings experiencing vibration in buildings. Consideration is given to the time of day and use made of occupied space in buildings, whether residential, office or workshop.

Table 4.4 shows the different likelihoods of adverse comment from nearby vibration sources on residential occupants.

Place and time	Low probability of adverse comment $m.s^{-1.75}$	Adverse comment possible $m.s^{-1.75}$	Adverse comment probable $m.s^{-1.75}$
Residential buildings 16h day	0.2-0.4	0.4-0.8	0.8-1.6
Residential buildings 8h night	0.1-0.2	0.2-0.4	0.4-0.8

Table 4.4 Likelihood of comment on vibration perceived within residential dwellings

It should be noted that the vibration levels outlined in Table 3.1 are at the point of entry into the human body, and not the point of entry of vibration into the structure itself. In the cases where the proposed structure is not yet built and vibration measurements cannot be taken inside the building, losses should be accounted for due to the transfer function between the ground and building structure and its foundations. As ground conditions, foundation types, building construction, and floor construction and loading are all variables in terms of transfer function and losses, this report will assume piled foundations in rock and a negligible loss as a worst-case scenario.

In addition to potential losses as vibration passes from unloaded ground into the structure, amplification of vibration can occur as the vibration propagates across a suspended floor, such as in upper floors of the proposed building. As this is fully dependent on the input frequency of vibration and the natural frequency of the receiving structure, VDV levels would only be considered on the ground floor of the proposed development within this assessment.

5.0 EXTERNAL BUILDING FABRIC SPECIFICATION

Sound reduction performance calculations have been undertaken in order to specify the minimum performance required from glazed and non-glazed elements in order to achieve the recommended internal noise levels shown in Table 4.1, taking into account average and maximum noise levels monitored during the environmental noise survey.

Typical sized bedrooms and open plan offices with a high ratio of glazing to masonry have been used for all calculations in order to specify glazing requirements. The following dimensions were used in the calculations:

- 16 m^2 Bedroom, Second Floor, East façade - glazing: 5 m^2
- 356 m^2 Open Plan Offices, Ground Floor, East façade - glazing: 24 m^2

As a more robust assessment, L_{Amax} spectrum values of night-time peaks have also been considered and incorporated into the glazing calculation in order to cater for the interior limit of 45 dB L_{Amax} for individual events, as recommended in WHO Guidelines.

Please note that the glazed and non-glazed element calculations would need to be finalised once all design proposals are finalised.

5.1 Non-Glazed Elements

At this project stage, the exact construction of the non-glazed external building fabric is unknown, however, it is understood that it would be based upon the construction proposed in Table 5.1 and would be expected to provide the minimum figures shown above when tested in accordance with BS EN ISO, 140-3:1995.

Element	Octave band centre frequency SRI, dB					
	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
Triple partition Metsec with Brick slip and Cement particle board	44	51	56	58	60	70

Table 5.1 Assumed sound reduction performance for non-glazed elements

The above façade performance has been simulated using Insul based on the construction detail provided byOrbit Architects.

5.2 Glazed Elements

Minimum octave band sound reduction index (SRI) values required for all glazed elements to be installed are shown in Table 5.2.The performance is specified for the whole window unit,

including the frame and other design features such as the inclusion of trickle vents. Sole glass performance data would not demonstrate compliance with this specification.

The assessment has been also undertaken for offices and commercial spaces located on the existing ground and first floor of the development ,in accordance with BS 8233-2014.

Elevation	Octave band centre frequency SRI, dB						R_w ($C;C_{tr}$), dB
	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
Residential – North Elevations	23	22	27	38	40	41	33 (-1;-4)
Residential – West Elevations	27	37	44	51	50	53	46 (-2;-7)
Residential – South Elevations	27	37	44	51	50	53	46 (-2;-7)
Residential – East Elevations	27	37	44	51	50	53	46 (-2;-7)
Offices/Commercial Spaces	28	23	32	38	42	44	35 (-1;-4)

Table 5.2 Required glazing performance

The nominated glazing supplier should verify that their proposed window system meets the attenuation figures shown at each centre frequency band as shown in Table 5.2.

Example glazing types that would be expected achieve the above spectral values are shown in Table 5.3.

Elevation	Example glazing type
Residential – North Elevations	6/12/4
Residential – West Elevations	Primary window: 9/20/11 50mm air gap Secondary window 6.4mm
Residential – South Elevations	Primary window: 9/20/11 50mm air gap Secondary window 6.4mm
Residential – East Elevations	Primary window: 9/20/11 50mm air gap Secondary window 6.4mm
Offices/Commercial Spaces	4/12/10

Table 5.3 Example glazing types

All major building elements should be tested in accordance with BS EN ISO 140-3:1995.

Independent testing at a UKAS accredited laboratory will be required in order to confirm the performance of the chosen system for an actual configuration.

6.0 VENTILATION AND OVERHEATING

6.1 Ventilation Strategy

Based on the noise levels measured on site, appropriate ventilation systems are outlined in Table 6.1 below in order to ensure the internal noise environment is not compromised.

Ventilation System	Whole Dwelling Ventilation	Extract Ventilation
ADF System 1	North façade: Acoustic wall vent providing a minimum performance of 34dB $D_{,n,e,w}$ West, South and East façades: Acoustic wall vent providing a minimum performance of 49dB $D_{,n,e,w}$	Intermittent extract fans
ADF System 3	Continuous mechanical extract (low rate) and acoustic wall vents for supply providing a minimum performance of 34dB $D_{,n,e,w}$ for North façade and 49dB $D_{,n,e,w}$ for West, South and East façades	Continuous mechanical extract (high rate) with trickle vents providing inlet air
ADF System 4	Continuous mechanical supply and extract (low rate)	Continuous mechanical supply and extract (high rate)

Table 6.1 Ventilation systems

In the case of mechanical ventilation, systems should be designed to meet the internal noise levels as defined in CIBSE Guide A (2015), as shown in Table 6.2.

Room Type	L_{Aeq}, dB	NR
Bedrooms	30	25
Living Rooms	35	30
Kitchen	45-50	40-45

Table 6.2 CIBSE Guide A 2015 guidance levels for mechanical building services

In all cases, purge ventilation would be provided by openable windows. As outlined in Section 4.3, the internal noise level requirement would not be applicable during purge conditions as this would only occur occasionally.

6.2 Overheating Control Strategy

In order to provide commentary with regards to the noise implications of the overheating strategy, thermal modelling calculations should be undertaken to inform the design team on the type of overheating strategy which will be adopted. The internal noise level would be

dependent on the open area required to manage overheating, and the time that the element would be required to be open.

Various solutions to control overheating and noise passively are outlined in Table 6.2. Please note that the preferable solution would need to be assessed in full by KP Acoustics in order to confirm the viability to provide a compliant internal noise level.

Mitigation Type	Description and References	Approximate Level Difference*	Improvement Relative to a Window Providing the Same Amount of Ventilation
1. Standard opening windows	Window(s) open sufficiently to provide a ventilation free-area equivalent to 2% of the floor area	13dB	0dB
2. Open windows with sound attenuating balconies	1. plus balconies with solid balustrade or enclosed to a further degree (maintaining an open area for ventilation). Absorption may be provided to the balcony soffit or potentially to other surfaces	17-23dB	4-10dB
3. Attenuated or plenum windows	Dual windows (spaced by around 200mm) with staggered openings and absorptive linings to the cavity reveals. Various other configurations also possible in principle	17-24dB	4-11dB
4. Attenuated vents/ louvres	Ventilation openings with means of attenuating sound. Typically acoustic louvres or acoustically lined ducts/ plena	17-29dB	4-16dB
Combination of 2, 3 and 4	Combined use of options 2, 3 and 4. Refer to descriptions above	21-39dB	8-26dB

Table 6.1 Examples of passive ventilation systems (Ref: AVO Guide)

***External free field level to internal reverberant level**

7.0 VIBRATION ASSESSMENT

72 Hour Vibration Survey Procedure

The unattended vibration measurements have been carried out on first floor level on the balcony as shown in Figure 2.1. Because of the location, results of the first floor vibrations measurements are indicative and therefore have not been used for the assessment of $VDV_{b/d,day}$.

Manual Measurement Survey Procedure

$VDV_{b/d,day}$ for the daytime period have been calculated based on formula 2 within Section 3.5 of BS6472-1:2008, as follows:

$$VDV_{b/d,day} = (t_{day}/\ t_{\tau})^{0.25} \times VDV_{b/d,\tau}$$

The results from the calculations are shown in Table 7.1.

Axis	Vibration Measurement	Calculated VDV Level $m/s^{1.75}$	Likelihood of Comment
x	$VDV_{d,day}$	0.330	Adverse comment is not expected
y	$VDV_{d,day}$	0.256	Adverse comment is not expected
z	$VDV_{b,day}$	0.049	Adverse comment is not expected

Table 7.1 Daytime and night-time VDV levels and likelihood of comment in accordance with BS6472

As shown in Table 7.1, the most dominant axis of vibration is the x-axis with a $VDV_{d,day}$ of $0.33m/s^{1.75}$, which correlates with adverse comment not being expected from future occupiers within the development.

8.0 EXTERNAL AMENITY AREA ASSESSMENT

The existing noise levels affecting the balconies of the East façade are expected to be 74dBA during daytime and 69dBA during night-time. BS8233 encourages that the "*noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$".* An absorptive acoustic soffit above the façade could be implemented along with a solid balustrade to reduce the existing noise levels of the trains pass-bys and reduce the noise levels by approximately 5dB.

Alternatively, sealed winter gardens on each balcony with openable sections can be built to achieve BS8233 recommended guidelines with regards to noise within external amenity spaces. This would allow the residential users to open the windows for fresh air without being affected by high noise levels coming from the railways underneath.

The following glazing specification would be suitable for the proposed winter gardens:

Elevation	Octave band centre frequency SRI, dB						R_w ($C;C_{tr}$), dB
	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
West Elevations	23	22	27	38	40	41	33 (-1;-4)

Table 8.1 Proposed sound reduction performance for winter gardens elements

9.0 CONCLUSION

An environmental noise and vibration survey has been undertaken at 1-6 Field Street And 14-16 Leeke Street, London, WC1X 9JF allowing the assessment of daytime and night-time levels likely to be experienced by the proposed development.

Measured noise levels allowed a robust glazing specification to be proposed which would provide internal noise levels for all residential environments of the development commensurate to the design range of BS8233.

No further mitigation measures should be required in order to protect the proposed habitable spaces from external noise intrusion.

Measurement of railways from train activity indicates that vibration levels are below the threshold of human perception in the z-axis, in accordance with BS6472: 2008.

Rooftop level, facing railways
Environmental Noise Time History
From 11 June 2021 To 14 June 2021

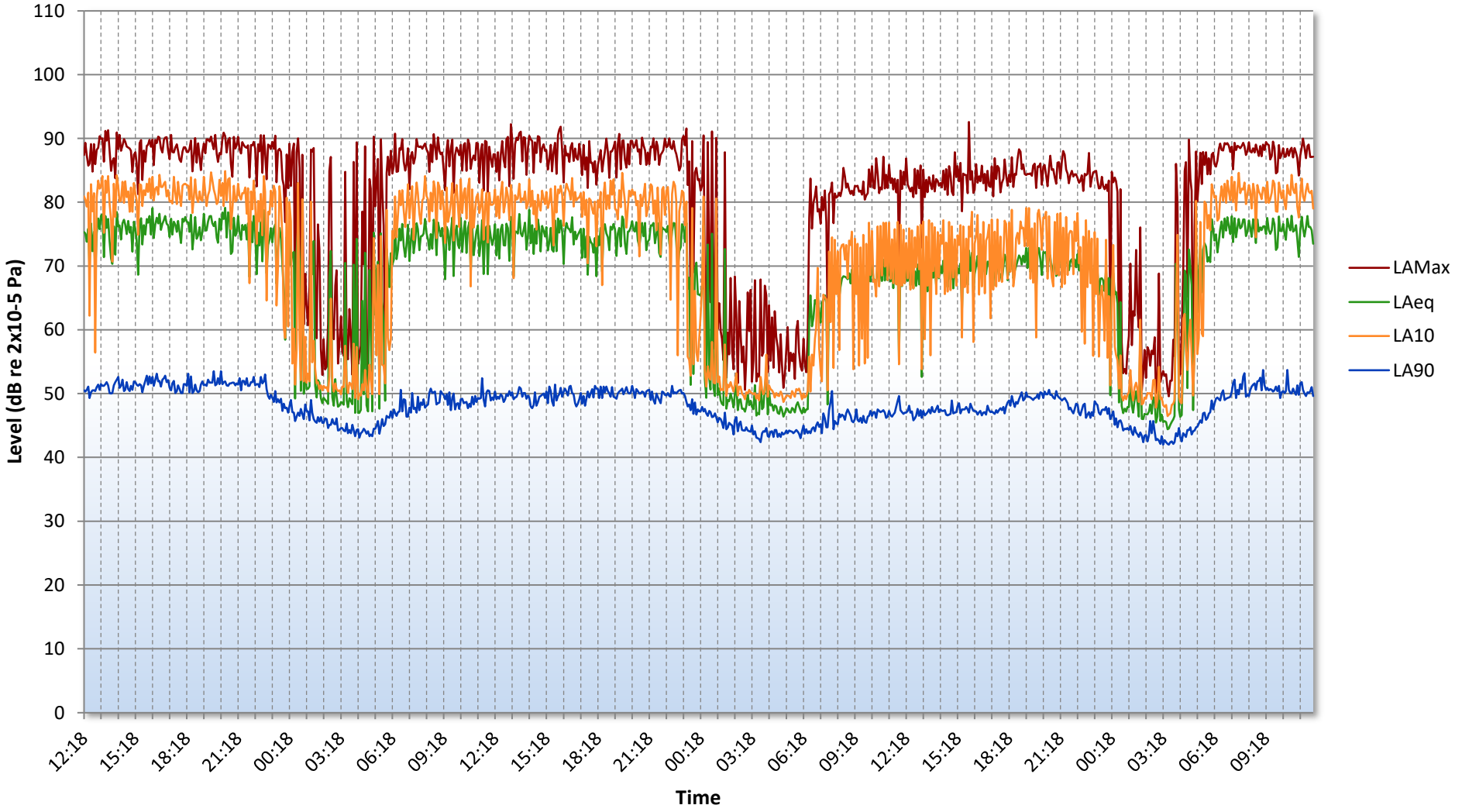


Figure 22784.TH1

Rooftop level, facing Leeke Street
Environmental Noise Time History
From 11 June 2021 To 14 June 2021

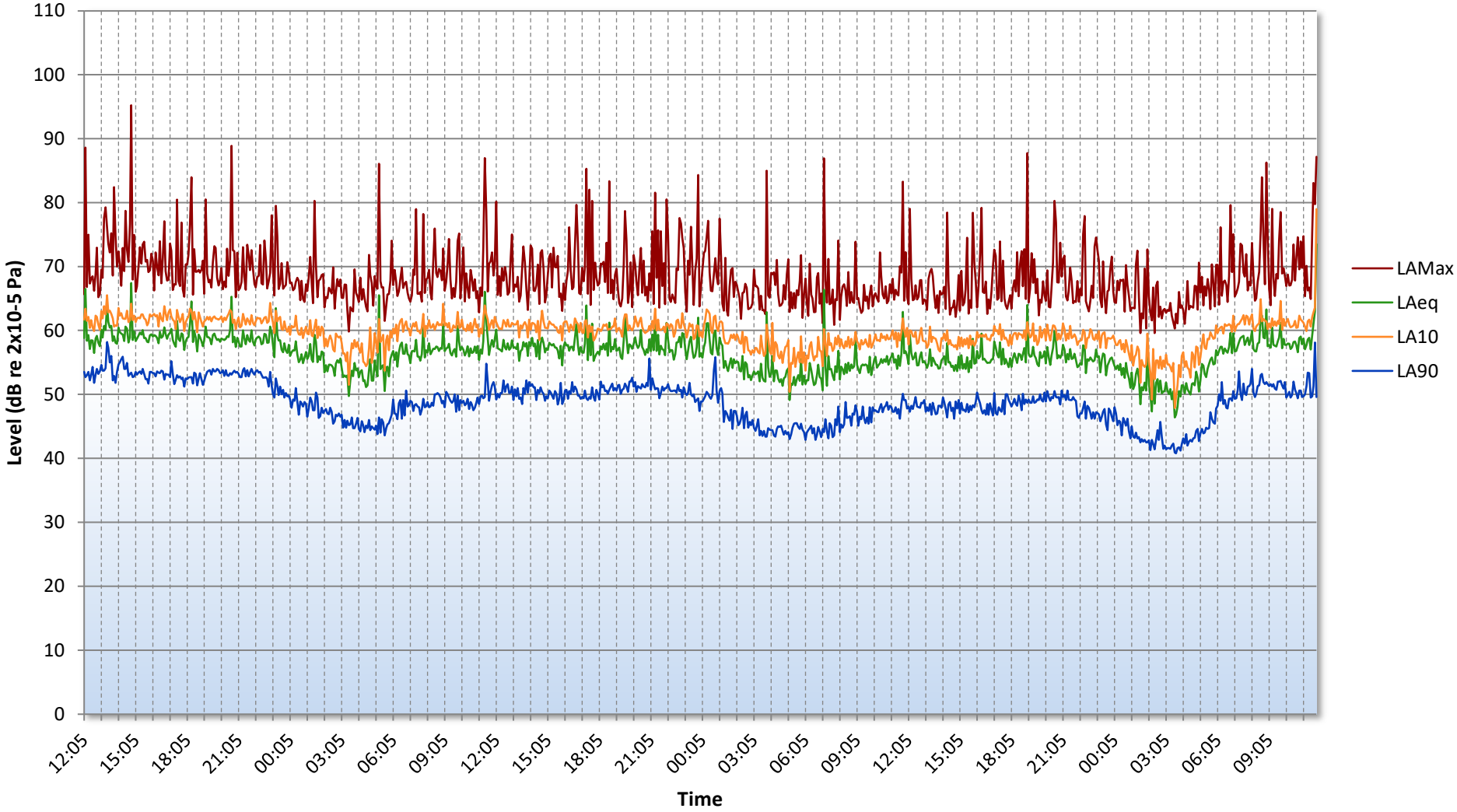


Figure 22784.TH2

1-6 Field Street and 14-16 Leeke Street, London
VDV Time History
From 11/06/2021 To 14/06/2021

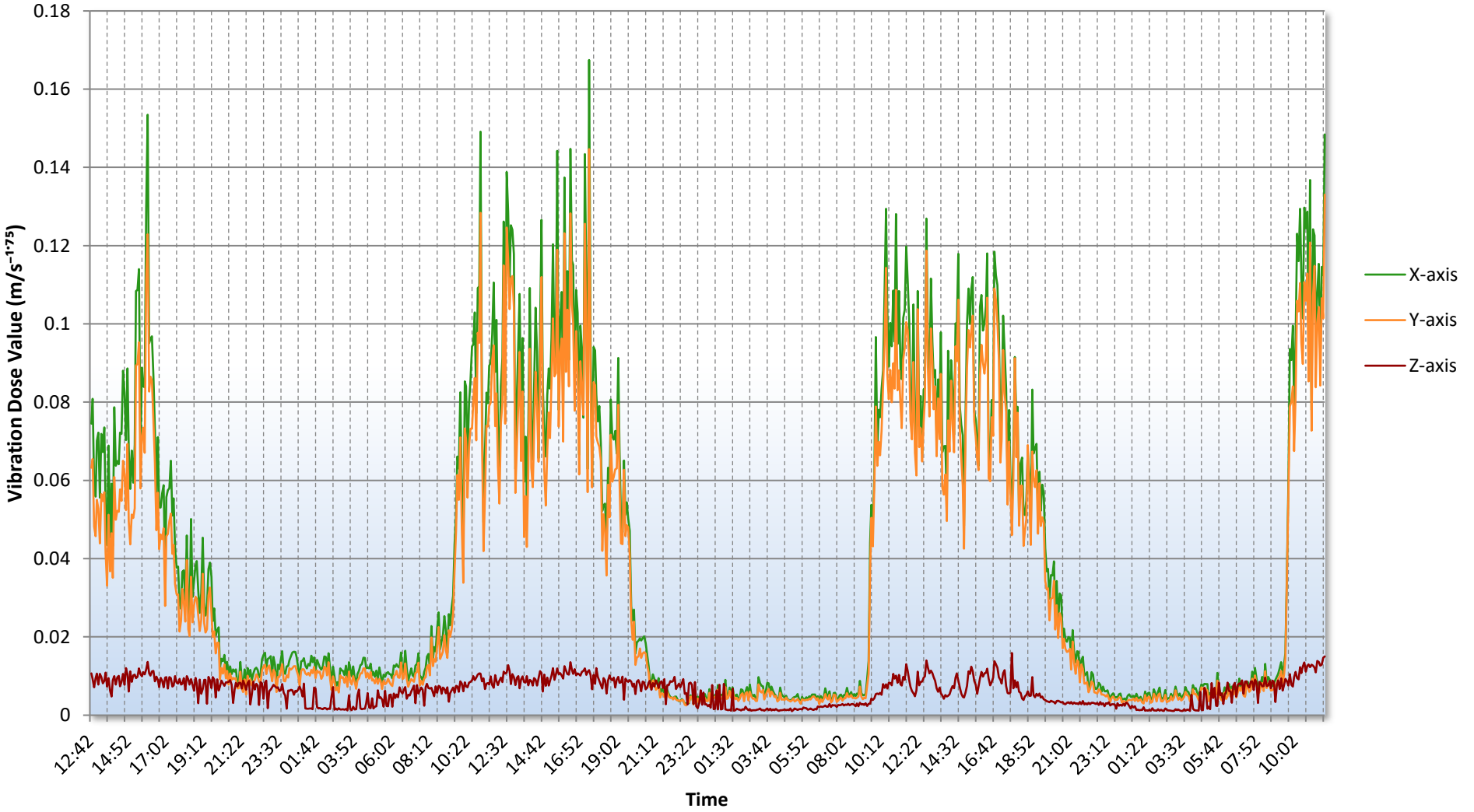


Figure 22787.VH1

APPENDIX A

GENERAL ACOUSTIC TERMINOLOGY

Decibel scale - dB

In practice, when sound intensity or sound pressure is measured, a logarithmic scale is used in which the unit is the 'decibel', dB. This is derived from the human auditory system, where the dynamic range of human hearing is so large, in the order of 10^{13} units, that only a logarithmic scale is the sensible solution for displaying such a range.

Decibel scale, 'A' weighted - dB(A)

The human ear is less sensitive at frequency extremes, below 125Hz and above 16Khz. A sound level meter models the ears variable sensitivity to sound at different frequencies. This is achieved by building a filter into the Sound Level Meter with a similar frequency response to that of the ear, an A-weighted filter where the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq}. The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for no more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise.

L_{90}

This is the level exceeded for no more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 11 such octave bands whose centre frequencies are defined in accordance with international standards. These centre frequencies are: 16, 31.5, 63, 125, 250, 500, 1000, 2000, 4000, 8000 and 16000 Hertz.

Environmental noise terms are defined in BS7445, *Description and Measurement of Environmental Noise*.

APPENDIX A

APPLIED ACOUSTIC TERMINOLOGY

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than a single source and 4 sources produce a 6dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3dB for each doubling of distance.

Subjective impression of noise

Hearing perception is highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a guide to explain increases or decreases in sound levels for many scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud

Transmission path(s)

The transmission path is the path the sound takes from the source to the receiver. Where multiple paths exist in parallel, the reduction in each path should be calculated and summed at the receiving point. Outdoor barriers can block transmission paths, for example traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and construction.

Ground-borne vibration

In addition to airborne noise levels caused by transportation, construction, and industrial sources there is also the generation of ground-borne vibration to consider. This can lead to structure-borne noise, perceptible vibration, or in rare cases, building damage.

Sound insulation - Absorption within porous materials

Upon encountering a porous material, sound energy is absorbed. Porous materials which are intended to absorb sound are known as absorbents, and usually absorb 50 to 90% of the energy and are frequency dependent. Some are designed to absorb low frequencies, some for high frequencies and more exotic designs being able to absorb very wide ranges of frequencies. The energy is converted into both mechanical movement and heat within the material; both the stiffness and mass of panels affect the sound insulation performance.