85 Gray's Inn Road Project

Construction Management Plan

Camden

Contents :

Revisions & additional material

Please list all iterations here:

Date	Version	Produced by
29/04/2022	01	Pieter Snyman (GPF Lewis)
20/06/2022	02	Pieter Snyman (GPF Lewis.)

Additional sheets

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

Date	Version	Produced by
07 July 2021	01	Environnemental Noise Survey - Hann Tucker Associates
August 2021	01	Air Quality Assessment (Dust Risk assessment in Section 5 & Mitigation Management Section 7) – Vanguardia
20 June 2022	01	Consultation Record of Issues & Solutions
6 May 2022	01	Cumulative Impact Area – Central London (Statement & Checklist)
23 May 2022	01	Addendum to CMR – CMP Working Framework
17 June 2022	01	Email Correspondence confirming time table for waste and recycling collection.
15 June 2022	01	Email correspondence with Vauxhall Surgery regarding the replacement of parking bays.
13 June 2022	01	Email correspondence with the Blue Lion Pub confirming deliveries schedule and location

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.**"

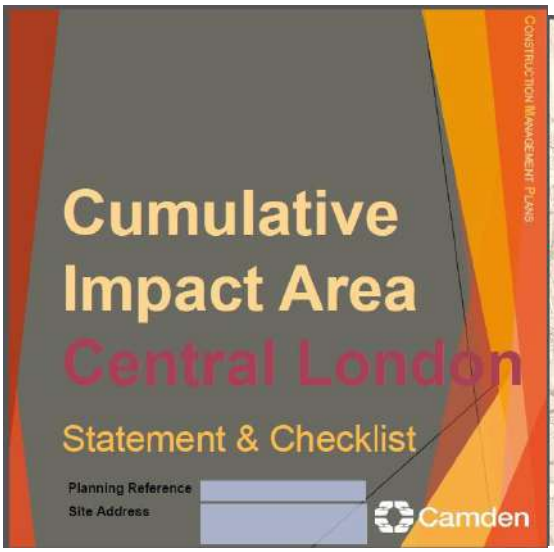
Please complete the questions below with additional sheets, drawings and plans as required. The boxes will expand to accommodate the information provided, so please provide as much information as is necessary. It is preferable if this document, and all additional documents, are completed electronically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

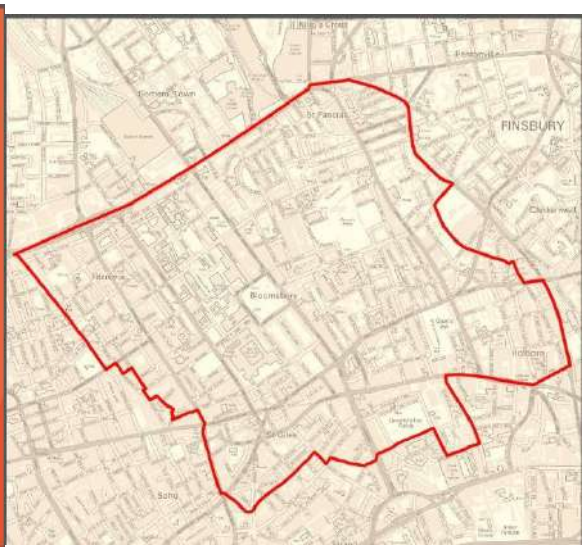
(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g. demolition, site clearance, delivery of plant & materials, construction etc.)

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.

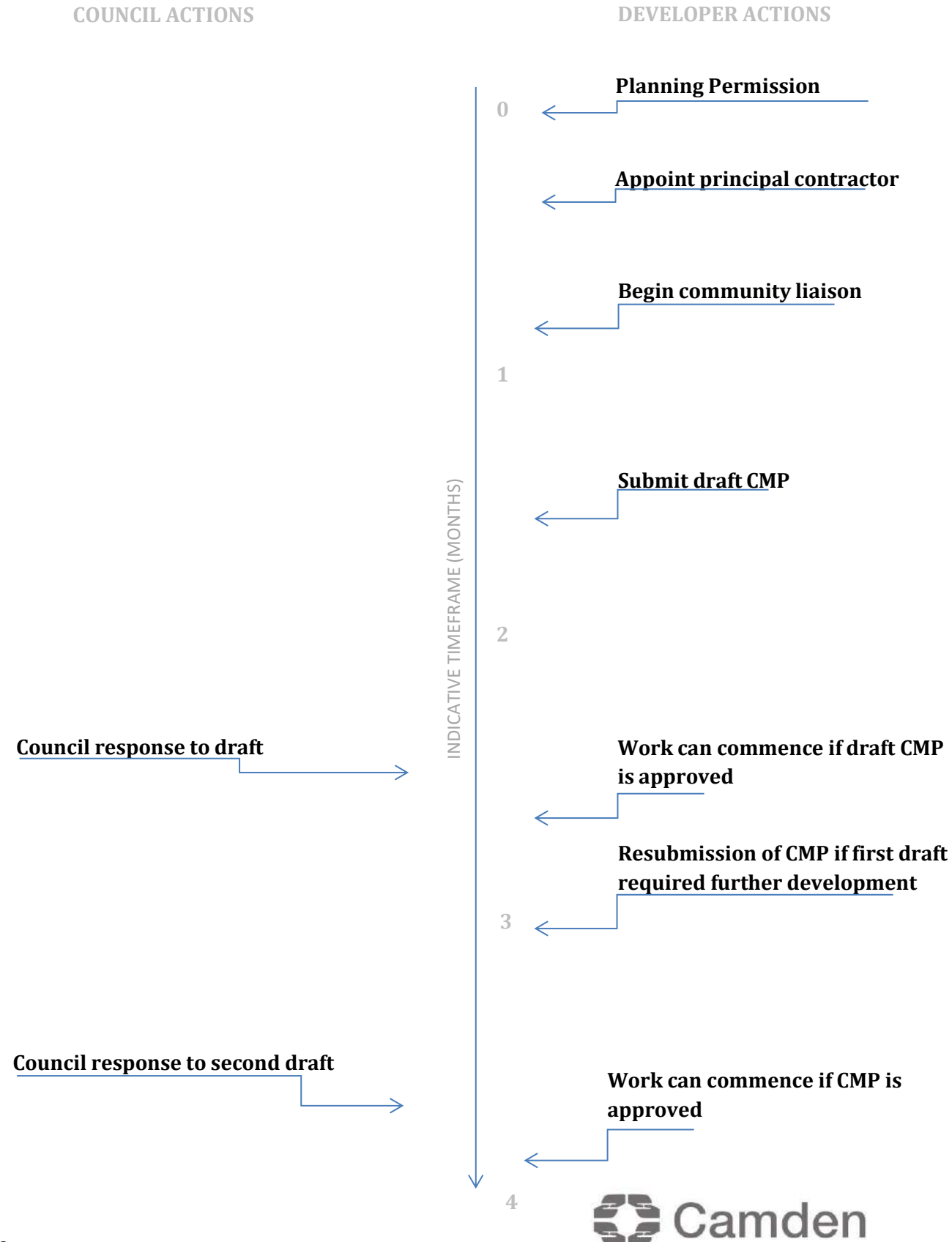
The CIA Checklist can be found at https://www.camden.gov.uk/about-construction-management-plans





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: **85 Grays Inn Road , London WC1 X 8TX**

Planning reference number to which the CMP applies: **2021/ 3673.**

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

Name : Gabriella Dyche

Address: 33 Margaret Street, Savills

Email: gabriella.dyche@savills.com

Phone: 07973726579

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: Pieter Snyman

Address: GPF Lewis , London Office , 3rd Floor , Twenty Baltic, 16-22 Baltic Street East , Clerkenwell EC1Y 0UL.

Email: pieter.snyman@gpflewis.co.uk

Phone: 07826873318

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: Pieter Snyman

Address: GPF Lewis , London Office , 3rd Floor , Twenty Baltic, 16-22 Baltic Street East , Clerkenwell EC1Y 0UL

Email: pieter.snyman@gpflewis.co.uk

Phone: 07826873318

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: Michael Grosvenor

Address: GPF Lewis London Office , 3rd Floor , Twenty Laltic, 16-22 Baltic Street East , Clerkenwell EC1Y 0UL

Email: michael.grosvenor@gpflewis.co.uk

Phone: 08452573612 & 07827964294.

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

85 Grays Inn Road , London , WC1X 8TX.

The site has a pedestrian crossing on Grays Inn Road and limited frontage on Roger Street and Grays Inn Road Junction to allow deliveries. Management of deliveries on Brownlow Mews is a challenge along the Mews, but is the best proposal due to the car park bays opposite which can be suspended allowing clear access for the residents.

The proposal pertains to the *'erection of a three storey infill extension at first floor to fourth floor levels, installation of fume extract and mechanical plant room at roof levels, installation of terrace at fifth floor level, erection of a front entrance canopy and associated alterations*.'

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).

The scheme is minor in scale.

Scope Overview

After finalising the site setup and welfare facilities, temporary electrics and protection, the mainworks will follow, consisting of the following:

- Piling at basement level
- New steel frame in the courtyard
- New roof finishes to the extension and repairs to the existing.
- Minor internal layout
- New toilet and shower cores on each floor
- New shell and core services throughout
- Substation works
- New plantroom construction
- Lift shaft alterations and replacement

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).

85 Gray's Inn Road - Project .

Note : Works at the **85 Gray's Inn Road project** will be done in a single phase and works is targeted to commence July 2022.

85 Gray's Inn Road .			
Activity	**Start**	**Duration**	**Finish .**
Issue CMP for approval to Camden	22.04.2022	10w	30.06.22
Camden target date for approval	24.06.2022		
Appointment & mobilization.	16.05.2022	6W	27.06.22
Procurement & Design.	02.05.2022	12W	23.07.22
Piling	18.07.2022	2W	01.08.22
Scaffold	11.07.2022	15W	24.10.22
Demolition.	01.08.2022	3W	29.08.22
• New steel frame & concrete slabs in the courtyard	29.08.2022	15W	12.12.22
New Party wall.	17.10.2022	8W	26.12.22
• New roof finishes to the extension and repairs to the existing.	12.12.2022	4W	16.01.23
• Minor internal layout	31.09.2022	4W	31.10.22
• New toilet and shower cores on each floor	21.11.2022	10 W	06.02.23
• New shell and core services throughout	24.10.2022	12W	06.02.23
• Substation works	08.08.2022	24W	28.11.22
• New plantroom construction	29.08.2022	6W	11.10.22
• Lift shaft alterations and replacement	22.08.2022	17W	30.01.23
Final Finishes.	16.01.2023	3W	13.02.23
Hand -over.	20.03.2023.		
Note : Construction phase will be circa 34 Weeks from Camden Council approval.			

Road Closure will be on Saturday & Sunday (08h00 - 16h00)
ONLY Road to be closed will be **Roger Street** with access to be maintained to **Brownlow Mews.**
NOTE : Traffic Management and Road Closure to be booked & managed by the Crane Company **DSM Cranes** after approval from CAMDEN Council.

Planned activity : **Saturday**	Start	Fin
Road Closure 1 . - Date to be agreed.		
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . SATURDAY	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Delivery of Spider Crane to be lifted onto roof of 85 Grays Inn Road .	09h30	10h30
Lift Spider Crane onto Roof of 85 Grays Inn Road.	10h30	12h00
Steelwork delivery for Courtyard Steelwork.	14h00	15h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

Planned activity : **Sunday**	Start	Fin
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . Sunday	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Steelwork delivery for Courtyard Steelwork.	10h00	11h00
Install Steelwork to the roof of 85 Grays Inn Road.	11h00	14h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

Planned activity : **Saturday**	Start	Fin
Road Closure 2 . - Date to be agreed.		
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . SATURDAY	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Steelwork delivery for Courtyard Steelwork.	10h00	11h00
Install Steelwork to Roof of 85 Grays Inn Road.	12h00	15h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

Planned activity : **Sunday**	Start	Fin
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . Sunday	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Steelwork delivery for **Roof Steelwork.**	10h00	11h00
Install Roof steelwork onto the roof of 85 Grays Inn Road.	12h00	14h00
Install New Acoustic Louvers onto roof of 85 Grays Inn Road.	14h00	15h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

Planned activity : **Saturday**	Start	Fin
Road Closure 3 . - Date to be agreed.		
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . SATURDAY	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Delivery of Roof Plant - ASHP	09h30	10h30
Install Roof Plant onto the roof of 85 Grays Inn Road.	10h30	12h30
Delivery of Roof finishes	13h00	14h00
Install Roof Finishes to the roof of 85 Grays Inn Road.	14h00	15h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

Planned activity : **Sunday**	Start	Fin
Mobile Crane being provided by DSM Cranes.	08H00	08h30
Set -up traffic management for Road Closure . Sunday	08H00	09h00
Set-up 50 Ton Mobile crane .	09h00	09h30
Delivery for Transport to remove Spider Crane from Roof.	10h00	11h00
Remove Spider Crane from the Roof of 85 Grays Inn Road.	12h00	14h00
De-Rig 50 Ton Mobile Crane and reopen **Roger Street**	15h00	16h00

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

- 8.00am to 6pm on Monday to Friday
- 8.00am to 1.00pm on Saturdays
- 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.).

Adjacent Buildings	There are occupied commercial/residential premises, which we will inform by letter of our presence and suggest they can approach us as a considerate contractor.
Noise Restrictions	Noisy works will be restricted to within the working hours.
Access Restrictions	Access to the project for management, operatives and visitors will be via the entrance on Barnabas Road. Site staff will use public transport (Homerton Train station 2min), but shift starts will be staggered to reduce the overcrowding on public transport. No parking will be available.
Present land use and Ground Conditions	N/A
Environmental Considerations such as watercourses	Noise, dust, vibration.
Existing Services	To be fully identified prior to erection of external scaffolding. Internal services for temporary connections.
Traffic systems/ Management	The site has a pedestrian crossing on Grays Inn Road and limited frontage on Roger Street and Grays Inn Road Junction to allow deliveries. Management of deliveries on Brownlow Mews is a challenge due to the residential properties along the Mews, but is the best proposal due to the car park bays opposite which can be suspended allowing clear access for the residents.
Local authority working hours restrictions	Monday to Friday 08:00 – 18:00 Saturday 08:00 – 13:00 Sundays and Bank Holidays N/A


A5200
ITN Productions
85 Grays Inn Rd,
London WC1X 8TX
Otto's French
Restaurant London
French • £££
Hopper Coffee
St
Grays Inn
Medical Practice
A5200
Japanese Asian Body
Massage Centre
Grays Inn Hardware
Hardware Shop


BROWNLOW MEWS
GRAYS INN ROAD
ROGER STREET
18.1m
17.6m
TCBs
LB

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.

gpflewis

85 Grays Inn Road
Holborn
London
WC1X 8TX

6 April 2022

Refurbishment - Community Liaison

GPF Lewis have been appointed to carryout the refurbishment of the above property and we would like to take this opportunity to introduce ourselves and to obtain your thoughts and considerations for the proposed Construction Management Plan for the planned works to the building.
The Draft Construction Management plan (CMP) is available for review via the following link and we ask for your comments on the proposed plan for review and consideration by the 19 April 2022.

Please click the link to access to the Construction Management Plan https://gpflewis-my.sharepoint.com/:f:/g/personal/graham_tallman_gpflewis_co_uk/EuMBVg-5jFFHIwfbpZbktPMBNhcaHpHumC0Inhz4QVDkw

Please return your comments, addressed to Pieter Snyman via the following options.

Email: pieter.snyman@gpflewis.co.uk

Post: Pieter Snyman 3rd Floor, Twenty Baltic, 16-22 Baltic Street East, Clerkenwell, EC1Y 0UL

All received comments will be collated and reviewed when finalising the draft plan for submission to Camden for approval.

This Construction Phase Health and Safety Plan contains the arrangements that will be implemented to ensure the safe execution of the works in compliance with the Construction (Design and Management) Regulations 2015. The plan also describes how environmental issues concerning the project will be managed.

The works are internal alterations and refurbishment works, including erection of steel structure, construction of a new extension, and roof works.

The anticipated commencement on site is in May 2022, subject to planning permission and lead-in period, with an overall construction period of 34 working weeks.

Upon approval of the CMP and the commencement of the works we will continue to update and liaise with all local residents and business.

Letters were issues in conjunction with the GPF Lewis Community Liaison Letter on the 6 April 2022. No comments were received, as of the 9 May 2022. However, GPF Lewis is committed to continually monitoring and reacting to any comments which we receive here after. The documents issued to the neighbours included contact details, in the event they wish to raise any concerns at any point.

It should be noted that consultation with the residents took place October 2021, prior to the CMP submission after strip out work (which does not require planning permission) took place on site. Below is an email surmising who spoke on behalf of the community and the key area of concern. It was agreed that the recessed fire escape/ courtyard entrances would need to be closed off from the public to prevent antisocial behavior. The suspension of the parking bays to the rear of the site was raised and considered in order to enable loading/unloading of materials at the rear. Lastly, the community has made an effort to bring in more planters on the road and therefore, we will be making an effort to support this within our end of the road. Please see email extract below detailing the meeting.

An onsite consultation was held on the 6 June 2022 at 12:00pm. Residents and interested parties were invited to attend and take part in discussions with GPF Lewis and Clearbell on the CMP. Please refer to the appendix list 'Consultation Record of Issues & Records' for a summary of issues and proposed solutions. The appendix also details an attendance sheet for those happy to leave their email address for future correspondence and engagement.

From: Dominic Moore
Sent: 08 October 2021 16:52
To: 'Emma Andrews' <emma.andrews@savills.com>; Raveen Matharu <raveen.matharu@savills.com>; Adam Wlodarczyk-Black <AdamWB@clearbell.com>; Nick Berry <nick@clearbell.com>
Cc: Gabriella Dyche <gabriella.dyche@savills.com>; Helen Gamble <h.gamble@bmjarchitects.co.uk>
Subject: RE: Planning update - 85 Grays

Hi All,

I've spoken to him. Perfectly reasonable but has raised a couple of good points.

1. They have an issue with undesirables using the recessed fire escape/courtyard entrances on Brownlow Mews for various nefarious acts. I think we need to look at the design of these and how we can close off the areas to the public. Will help both the residents and our future tenants. Something for the design team to consider.
2. We should mention to the Council that it would be a good idea to temporarily suspend the two parking bays opposite the courtyard entrance. This will mean that vehicles/people can still pass easily if we are loading/unloading materials at the rear. I get the impression we might find our movements to and from site are restricted when we get planning.
3. They've made an effort as a road to bring in more greenery with large planters and we could add to this at our end. One to look at in time.

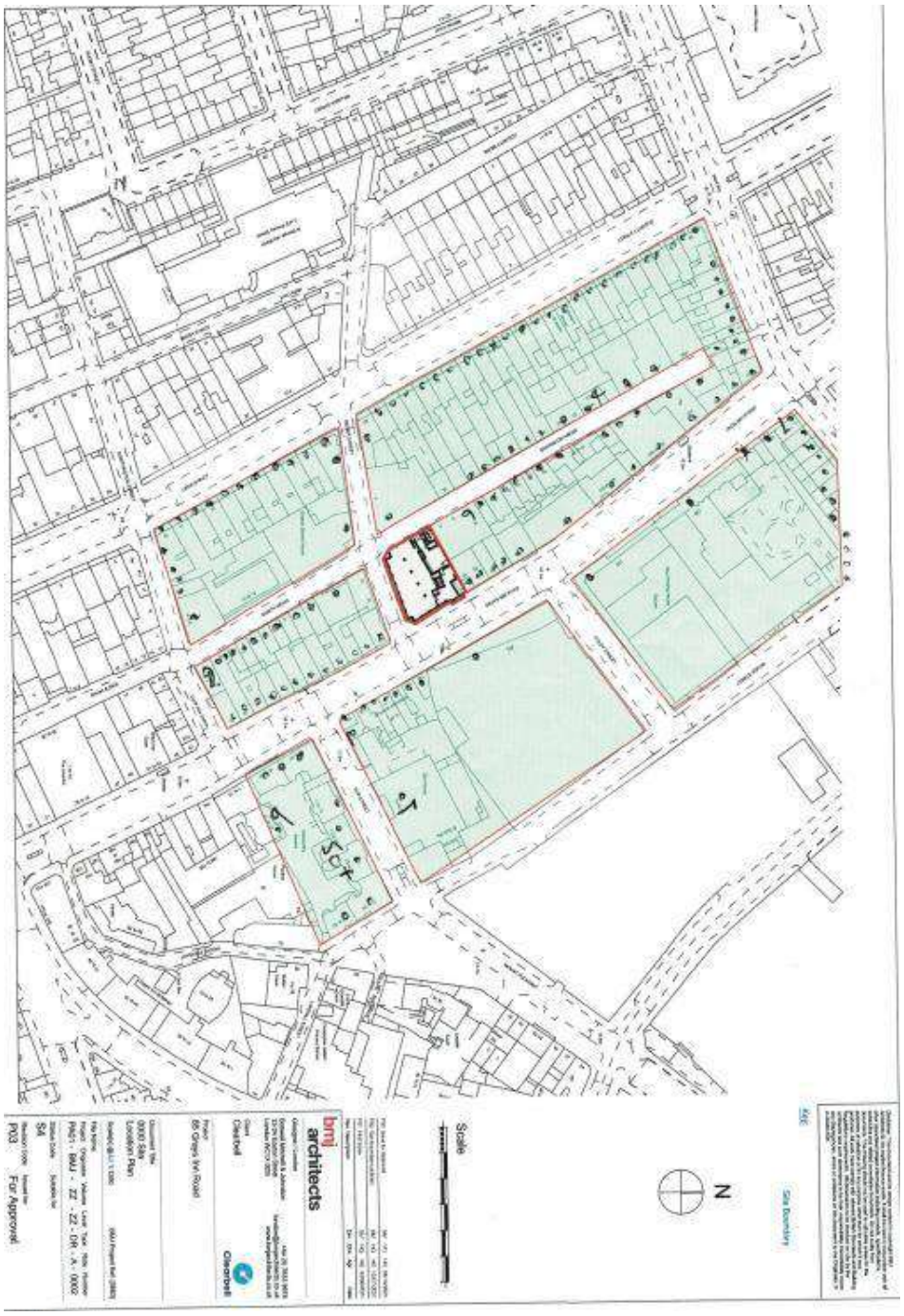
He also commented that Warren has been good at communicating with them during the strip out works.

He is definitely engaging with the Council on planning so good to keep him on side. A good contact for us to liaise with over time.

Kind regards

Dom

Letters for the CMP were delivered at the addresses colored in Green.



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.

GPF Lewis will be issuing News Letter to all Neighbors informing / updating all parties regarding upcoming works, construction progress , deliveries planned , any issues affecting the surrounding areas of the Construction site at 85 Grays Inn Road project.

There are no new Construction projects in close proximity that will affect the roads and infrastructure to be considered and require close coordination and the set-up of Construction working groups.

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.

CCS – Registration Number: 131136 – 85 Grays Inn Road Project

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.

There are no new Construction site in close enough proximity to affect and create a cumulative impact on the roads and infrastructure

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:

GPF Lewis – London Office , 3rd Floor , Twenty Baltic , 16-22 Baltic Street East , Clerkenwell EC 1Y0UL

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

Monitoring compliance of site operations and fleet operations against the CLOCS Standard is critical to ensure all parties consistently meet that national standard and, where necessary, take appropriate constructive action where an organisation falls short of that standard to prevent recurrence.

The Principal Contractor will work to maintain and exceed the CLOCS standards by effective monitoring of all activities covered by the scheme.

This will include invitations to the CLOCS team to assess the site

Correct usage and maintenance of the CLOCS self-assessment forms and marking criteria;

Provision of a suitably qualified site operative to undertake Liaison and all tasks associated with CLOCS and the authority to implement change, or take disciplinary action as appropriate;

Will undertake where practical all recommendations for improvement through internal lessons learnt and CLOCS team advisories, and recommendations;

GPF Lewis will supply evidence of compliance at timely points within the project with agreement of the Cpuncil, and on request in a timely manner on an ad hoc basis.

The key methods of monitoring and management will be through the use of the official CLOCS documentation including, but not exclusively:

- Preparing for your visit
- Self-assessment checklist
- Self-assessment scoring sheet
- CLOCS Site Checklist

The above documents can be found on the CLOCS web site at:
https://www.clocs.org.uk/page/site_monitoring

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:

WE have understood the CLOCS standards and our requirement to abide by these standards and to place them on to the Principal Contractor and their subcontractors , supply and logistics companies.

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)

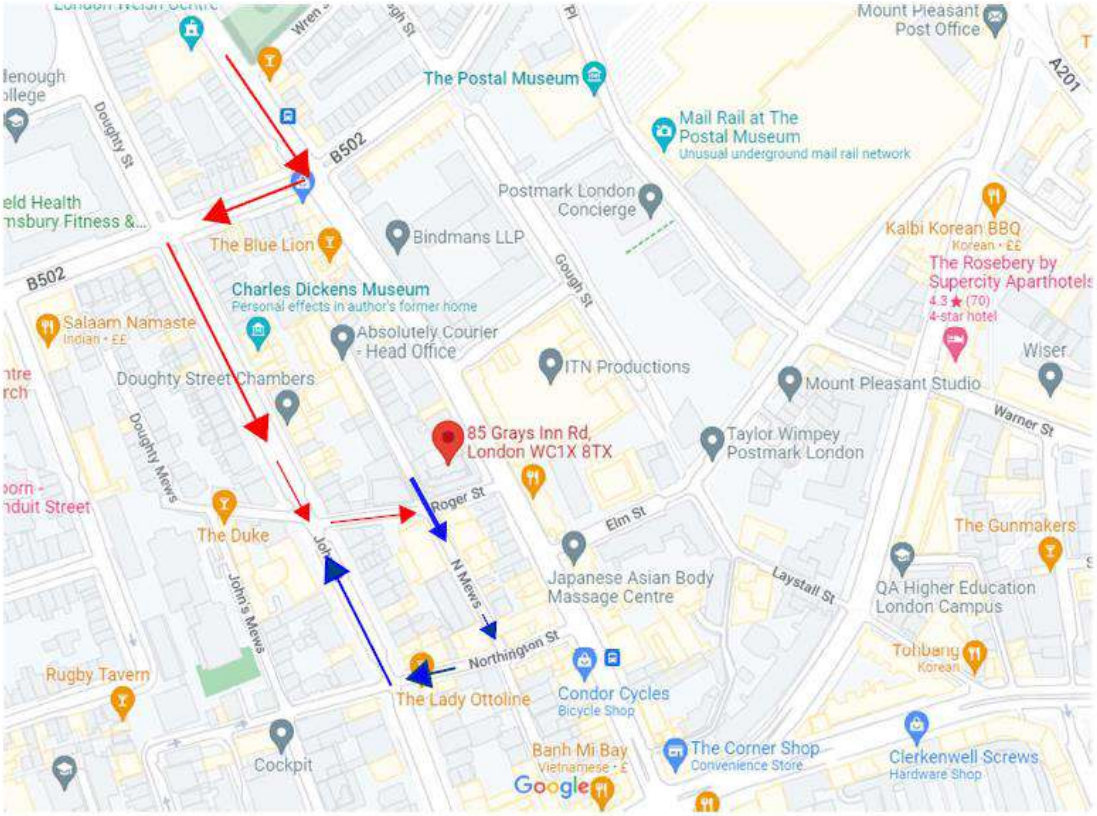
Routes should be carefully considered and risk assessed, taking into account the need to avoid where possible any major cycle routes and trip generators such as schools, offices, stations, public buildings, museums etc.

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.

85 Grays Inn Road project highlighted routes.



Traffic inn & out of 85 Grays Inn Road Project.

Red Arrows showing traffic in.

Blue Arrows showing traffic out .

Camden

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.

- Traffic Management Plans will be issued to the Contractors as part of their Sub-Contract orders.
- All Sub-Contractors and suppliers will have a prestart meeting on site at 85 Gray Inn Road project with GPF Lewis where logistic , vehicle movement and traffic management will be discussed in detail .
- Sub-contractors will issue all deliveries required a week in advance to be included in the GPF Lewis delivery schedule .
- Delivery schedules will also be shared with Mews residence as discuss in the neigbour liaison meetings.
- Delivery schedules get issued every Friday for the next weeks deliveries.

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

Vehicle movements will vary during the works, however it is anticipated that the maximum number of trips will be as below.

We would anticipate that a daily vehicle level of the following would apply by access during peak time;

- Small vehicles (Vans, cars etc.) - 3 No. per day (6 Trips)
- Medium vehicles (Delivery) - 3 No. per day (6 Trips)
- Large articulated wagons - 0 No. per day (0 Trips)

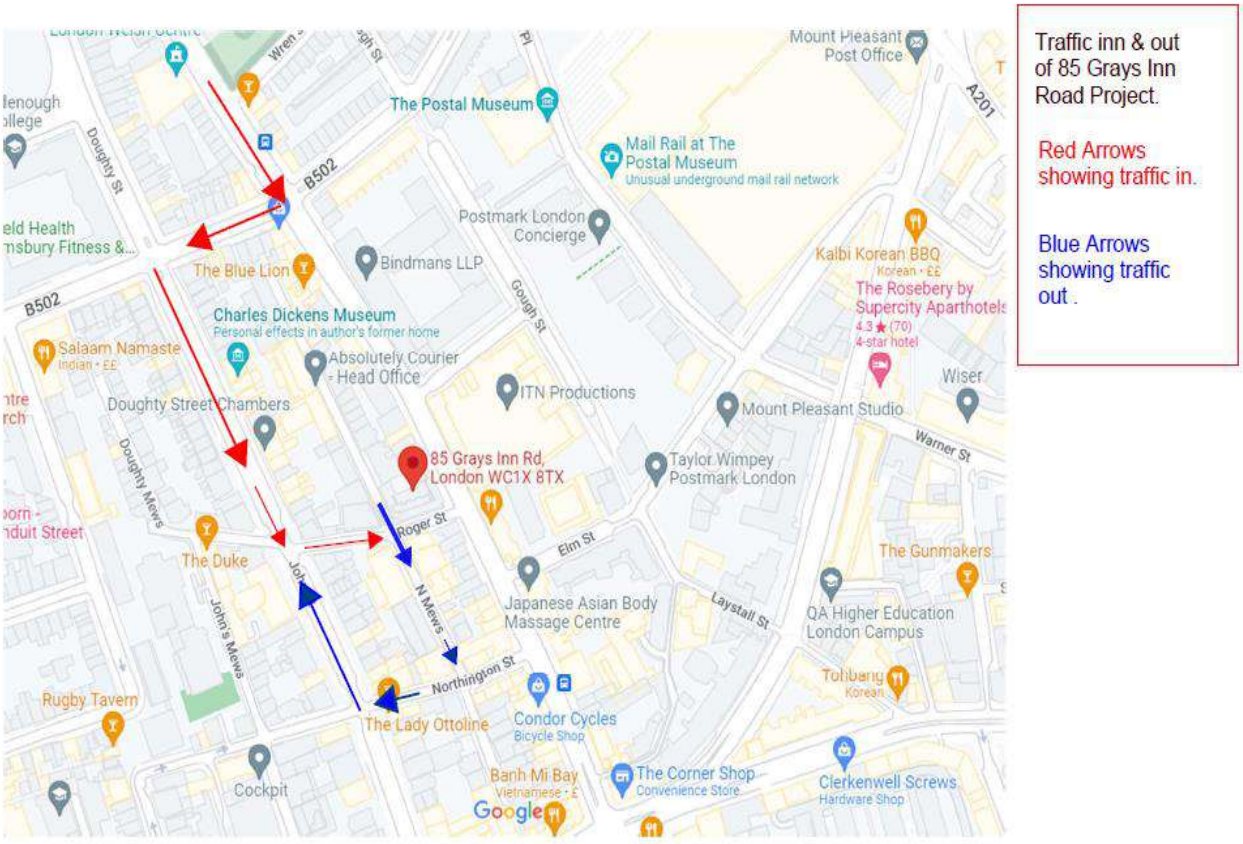
It is not anticipated that articulated vehicles will be generally used due to the offloading areas available. On average we have estimated 6 deliveries to site per day at peak time for various sized vehicles (Trips) .

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.

It is not envisaged that the traffic flow will affect other sites due to is nature and size of vehicles not being large vehicles . The 85 Grays Inn Road project is small in size and short in duration and will hopefully have minimum to no effect to the surrounding area.

c. Please provide swept path analyses for constrained maneuver's along the proposed route.

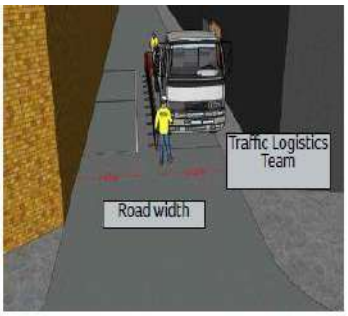
- Vehicle will be directed down Rogers Street and be banked to turn into the North Mews .
- Traffic and pedestrians will then be managed with the use of banksman & traffic marshals in the road to allow the vehicle to be reversed into Brownlow Mews .
- Vehicles will be directed to park to be off loaded or loaded with the vehicle parked as close as possible to the 85 Grays Inn Road building allowing access for all vehicles from Brownlow Mews to maintain access in and out of Brownlow Mews
- Site vehicles will be barriered off to ensure segregation from pedestrian , cyclists and other road users.
- Gpf Lewis will ensure all vehicles parked / positioned in the Mews can vacate the Mews on short notice to ensure complete access to the Mews can be regained for any emergency vehicles to entre the Mews and to coordinate with any Mews access required.

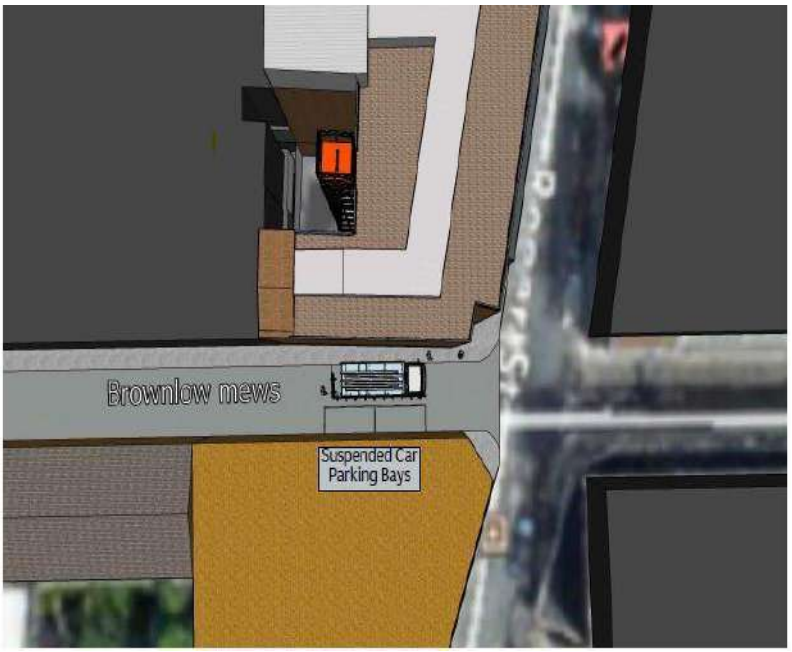


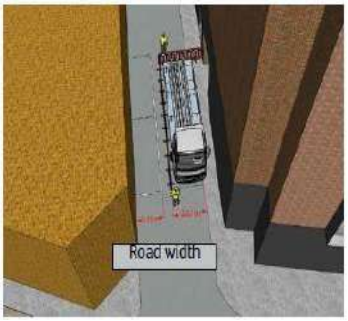
d. Consideration should be given to the location of any necessary holding areas/waiting points for sites that can only accommodate one vehicle at a time/sites that are expected to receive large numbers of deliveries. Vehicles must not queue or circulate on the public highway. Whilst deliveries should 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.







Note : GPF Lewis after consultation with Camden Council will ensure that there will be 2 Banksman / Traffic Marshalls controlling vehicle and pedestrian movement at all times . We will introduce more visible and more maneuverable barriers on the outside of the Mews and around the vehicles to ensure the segregation between pedestrians , vehicles and materials being handled are managed safely at all time . See image of barriers that will be implemented .

Material will be delivered and moved into the courtyard from the various delivery vehicles parked.

Note : GPF Lewis after consultation with Camden Council will ensure that there will be **2 Banks man / Traffic Marshall's** controlling vehicle and pedestrian movement at all times . We will introduce more visible and more manoeuvrable barriers on the outside of the Mews and around the vehicles to ensure the segregation between pedestrians , vehicles and materials being handled are managed safely at all time .
All vheciles will be backed into **Brownlow Mews** and will be able to be moved immediately in-case of an emergency and if an fire-brigade of ambulance needs access.
Access will be provided for VEOLIA at all times.
GPF Lewis have consulted with the pub manager at the **Blue Lion** and all deliveries are made on Grays Inn Road.

Note: Please refer to the appendices for email correspondence with Veolia confirming their waste collection schedule which has been considered for the anticipation of works on site and email correspondence with the Blue Lion Pub, confirming deliveries are schedules along Grays Inn Road.

After consultation with the Grays Inn Medical practice and Camden Council it was agreed that the Doctors parking bay in Brownlow Mews will be relocated for the duration of the Construction works on the **85 Grays Inn Road project .**

See below location of the relocation position agreed :

Please see attached within the appendices correspondence with Vauxhall Surgery on the need to require a replacement parking bay over the course of 34 weeks. This Bays has been agreed with Camden Council (Parking) to be supplied for the use of the Doctors Surgery.

Waste Collection

After discussions with Veolia, GPF Lewis will ensure the collection days (Mondays & Thursdays) confirmed below will be coordinated with project deliveries . It should also be noted that due to the vehicles which will be servicing the site from the mews, does not require legs, the vehicles will be able to be moved, should access to the mews be required immediately. The vehicle will be parked as close to the kerb side as much as possible, to ensure access onto brownlow mews throughout.

EM EcoCamden Mailbox, UK Veolia Waste <uk.veolia.waste.ecocamden.mailbox@veolia.com>
To Pieter Snyman

Reply | Reply All | Forward

Fri 17/06/2022 11:45

You replied to this message on 17/06/2022 11:57.

Hi Pieter,

I hope you are well.

Following our conversation yesterday, I have confirmed with our crew manager that the waste and recycling for domestic properties in Brownlow Mews are collected **every Monday and Thursday.** Food waste is collected **weekly on Mondays**. Residents should put their bags / bins on the street by **7am** on collection day(s).

If you have any questions regarding road blockage and construction works please liaise directly with Camden Council.

Kind regards,
Sam

Education, Communication and Outreach (ECO) Team
Veolia Camden (*United Kingdom)*
020 3567 8105 (Customer Support Centre)

Join our mailing list to receive our quarterly recycling newsletter here!

www.veolia.co.uk

Barriers to be used to segregate people and vehicle movement

Pedestrian board with patented Flexi-Edge technology, suitable for 700mm trenches.

Specifications:
Length: 1125 mm
Width: 1125 mm
Weight: 26 kg
Colour: Yellow

Driveway board with patented Flexi-Edge technology, suitable for 3.5 tonnes vehicles over a 900mm trenches.

Specifications:
Length: 1500 mm
Width: 1000 mm
Height: 33 mm
Weight: 42 kg

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.

It is envisaged due to the nature of the works being refurbishment that the contractors will look to consolidate deliveries at their "yard" prior to release to site.

Deliveries will be coordinated around the peak times of both traffic and public in For larger deliveries involving road closures this will be with formal request .

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).

All engines will be turned off when not in use and by booking and telephone call off vehicle movements will be limited. No generators will be used .

Also, by being a refurbishment the majority of construction equipment will be powered by electricity from mains supply (altered suitably for site usage to 110 etc.)

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.

No site access.

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.

No site access.

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.

No site access.

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.

No Site Access.

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.

DELIVERY MANAGEMENT

During the project, numerous types of delivery vehicles will be used to bring materials to and from site these include:
Piling rig
Wait and load skip lorries – Generally standard 8cuyd skips
Tipper lorries
Ready mix concrete lorries
Flatbed lorries –For the delivery of Timber truss, rebar, blocks, timber, plasterboard, lift and general construction materials

The projected vehicle movements are approximately 5-10 per day during the main contract works period. A daily delivery schedule will be managed giving each vehicle a delivery and loading slot. This will prevent congestion in the local area and stacking up of vehicles on the surrounding streets. Vehicles will not be allowed to enter the area until the previous has left the site, and they will be asked to contact the site 20 mins before arrival to confirm.
Any vehicle that arrives unannounced will be turned away if it cannot be accommodated in the daily schedule.

Please refer to the scheduled time tables above which indicates where deliveries will be off loading material and when.

Deliveries will be timed so as not to clash with refuse and HGV deliveries to the Pub. The schedule for the refuse collection is included within the appendices. The Pub has also confirmed through email correspondence that their deliveries is organized from Grays Inn Road, this is also appended to the CMP .

The vehicles servicing the site from the mews will not require the use of support legs and will therefore will be able to position directly against the kerb. In the event of emergency fire access , the vehicles will be able to be moved immediately. Additionally, in any event, the vehicles will be able to move to permit general HGV access into the Mews. Access to properties within the mews, such as the car park entrance opposite will be maintained throughout all works on site. Vehicles which will be servicing the site will move in any case to allow access to the car park if necessary. The use of the road closure will be kept under review and will be required by Camden , if it transpires that it is not possible to maintain the required access into the mews whilst deliveries to the site are taking place.

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.

Traffic marshals will be trained to ensure that priority is given to allow pedestrian priority especially in the case of old, infirm, and disabled including wheel chair users.

The marshals will oversee all deliveries and will hold pedestrians and vehicle traffic on a very short term basis during the lifting operations/ material unloading that could possible pose a risk to members of the public. Access to all general pedestrian and vehicle traffic will be permitted wherever possible.

Access to Mews residence carpark will be maintained at all times with no access being blocked at any time, **no parking in front of residence carparks will be tolerated** . Signage will be installed in line with the abovementioned statements.

Where necessary however for vehicle movement temporary concertina barriers may be used to ensure that pedestrian strike risk is minimised.

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.

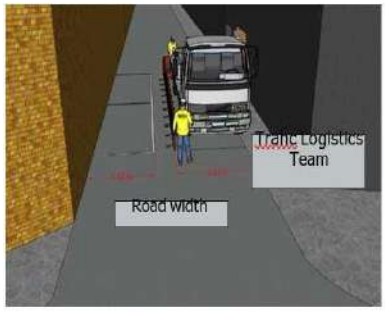

NO THROUGH ROAD
Brownlow Mews
PAY & DISPLAY
DOCTOR
COURTYARD ACCESS FOR BICYCLE PARKING, WASTE & GAS SERVICING
FIRE ESCAPE
BICYCLE PARKING
EAST STAIR CORE
RECEPTION
STAFF / VISITOR / DELIVERIES MAIN ENTRANCE
85 Grays Inn Road
Roger St
DISABLED
DISABLED
BUS STOP
CYCLE LANE
CYCLE LANE
Grays Inn Road
CYCLE LANE
CYCLE LANE
Key:
Site Boundary
N
Scale
bmj architects
Client
Clearbell
Project
85 Grays Inn Road
Document Title
0000 Site Street Plan
PA01 - BMJ - ZZ - ZZ - DR - A - 0003
P04
Contract

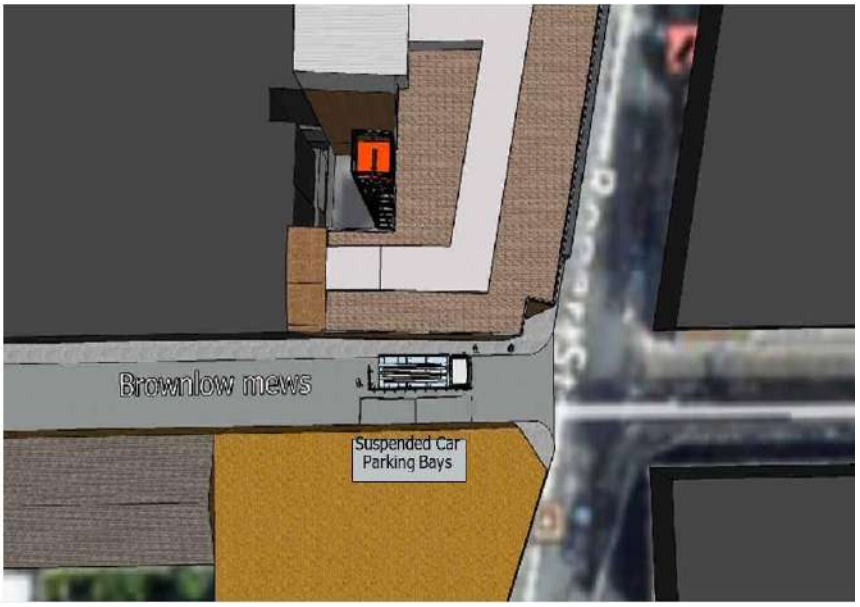

BROWNLOW MEWS
GRAYS INN ROAD
18.1m
200
TCBs
ROGER STREET
LB
17.6m

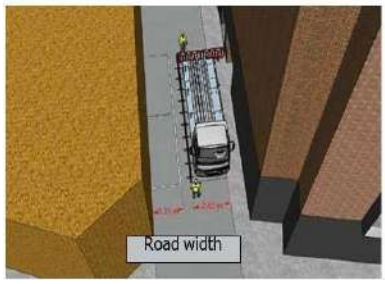
23. Parking bay suspensions and temporary traffic orders

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.







The above image demonstrates the highway width of 4.5m + 1.9m for the parking bays. With the HGV parking on kerbside a minimum of 3.9m will be maintained as an open access point to Brownlow Mews.

Information regarding parking suspensions can be found here.

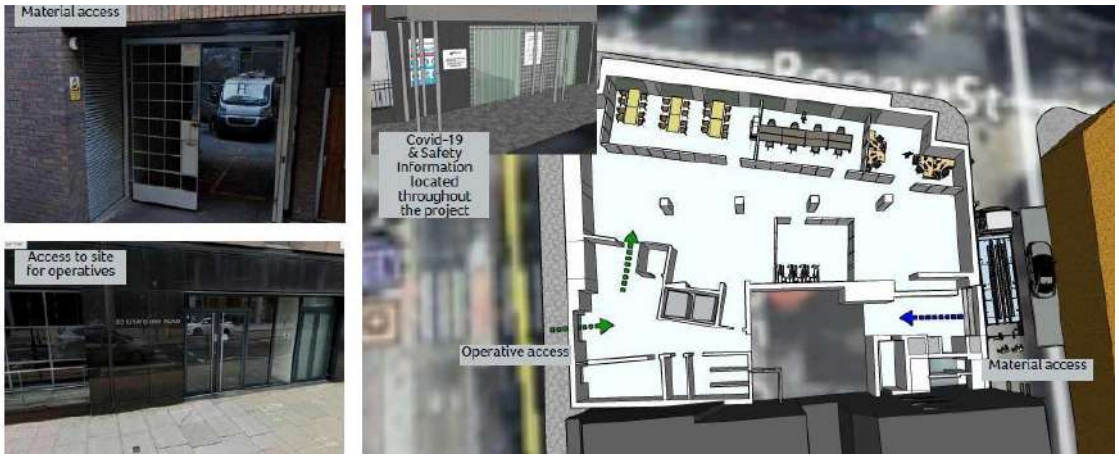
The two parking bays along Brownlow Mews will be suspended for a period of 34 weeks. This is currently being applied for to the Council and discussions surrounding the relocation of the doctors bay has been confirmed. Please refer to the email correspondence attached and 19 (d) of this proforma which Sets out further information.

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.

Due to this project being a Refurbishment project All site accommodation and Welfare facilities will be accommodate inside the Building at 85 Grays Inn Road .



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.

There are no considered highway works related to the works at this stage and these will be covered by separate application if 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.

No diversion is required during the construction phase of the project.

Specific application will be made if any road closures is required and this will all be done through the correct procedures through CAMDEN council with the correct notice periods adhere to .

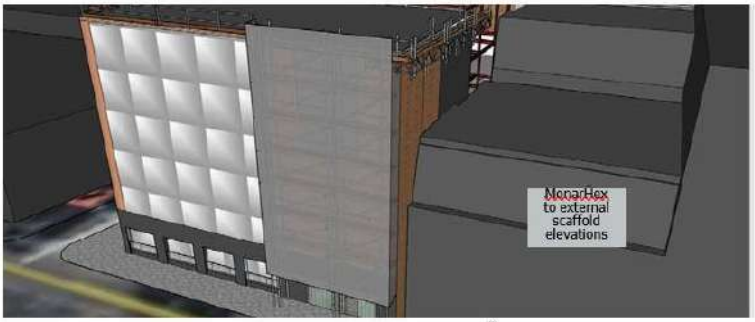
26. Scaffolding, hoarding, and associated pedestrian diversions

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.



Scaffold design including hoarding in Grays In Road is being finalized and will be issued for review / approval.

Design will ensure pedestrian access is maintained at all times .

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

None.

27. Services

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

225	UKPN	23w 2d	13/06/2022	23/11/2022
226	Surveys & Drawings - Durasteel	1w 4d	12/07/2022	22/07/2022
227	UKPN Approval	1w	25/07/2022	29/07/2022
228	Temporary support	3d	25/07/2022	27/07/2022
229	Blockwork	2w 2d	28/07/2022	12/08/2022
230	Durasteel Lead-In	3w	01/08/2022	19/08/2022
231	Install Steel cable ducts to substation	1w	15/08/2022	19/08/2022
232	Install Durasteel ductwork Extract	1w	22/08/2022	26/08/2022
233	Works to Floor	1w	30/08/2022	05/09/2022
234	Install Sunray doors	2d	06/09/2022	07/09/2022
235	Install Ventilation Grille	2d	06/09/2022	07/09/2022
236	Install unistrut & lifting eye	3d	08/09/2022	12/09/2022
237	Form earthing pit & earthing rods	1w	06/09/2022	12/09/2022
238	Install LV Panel & associated electrical works	2w	13/09/2022	26/09/2022
239	Earth testing	2d	27/09/2022	28/09/2022
240	Decoration	2d	27/09/2022	28/09/2022
241	Snagging	3d	29/09/2022	03/10/2022
242	UKPN Consultation	16w	13/06/2022	03/10/2022
243	UKPN Inspection	2d	04/10/2022	05/10/2022
244	UKPN Lead In	4w	06/10/2022	02/11/2022
245	UKPN Works	3w	03/11/2022	23/11/2022

UKPN design is being finalized works is being targeted above . Close coordination with UKPN will be key to the success of the project . UKPN will be work under the direction of GPF Lewis and all Access to and from site including Traffic management will be controlled under the direction of GPF Lewis in line with the agreement of the approved plans.

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.

All rates at source and not at boundary of site:

Drilling / break out (Kango hammer): demolition phase for breaking out and removal of brickwork & blockwork . Phase deconstruction. 83-100 db

Drilling / diamond cutting: Demolition and construction phase - Breaking out existing concrete plinth in the basement & roof through from start of project (2-3 weeks) 120-130 db

Scaffolding erecting and de-construction, generally related to metallic percussion noise and limited in duration to commencement and clearance of scaffold, though with careful operation this will be minimised;

Vehicle movements for delivery / off loading at standard diesel vehicle rating (circa 93db)

Wood working equipment Construction phase. 82-96 db

Concrete pours (Concrete being pumped) - construction phase 101-123db

This list will be further defined on the final scoping and agreement of construction methodology by GPF Lewis but is to provide guidance at this stage and show acceptance of noisy activities.

It should be noted that all staff will be provide with the correct PPE to meet the activities to meet recommended hearing protection including to Grade 5. Please refer to the appendixes for the original noise assessment submitted to the Council as part of the full planning application.

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.

The most recent noise survey was conducted 7 July 2021 (ref: 28809/NPA1/Rev1) in support the planning application and will be provided as part of the submission pack for the CMP.

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

GPF Lewis as the Main Contractor will employ the services of an Noise Monitoring specialist contractor called **RVT Group** . A Noise Management plan will be incorporated .

James Dupont | Protecting Long Term Health On Site.
Technical Consultant | RVT Group | T 01322 421 290 | james.dupont@rvtgroup.co.uk

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.

Water dust suppression will be used EXTERNALLY and cutting equipment where possible will be used in line with either a bagging or wet suppression system to **reduce noise**

Deconstruction methods will be adopted over traditional demolition to minimise both dust and **noise.**

All plant and machinery will be suitably "guarded and contained" within the lines of the manufacturers guidance and chosen by the contractor to minimise noise or be undertaking with baffles where appropriate.

Final details will be inline with the Noise management plan being produced by **RVT Group** as stated above.

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

BS5228:2009

All contractors and operatives will be trained and certificated to BS 5228:2009. The Principal Contractor will ensure that full record is kept and made available to the council in a timely manner on request.

GPF Lewis will be vetting subcontractor and training records will be checked including qualifications and methodologies.

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 scaffold will be sheeted to minimise dust transmission;

External surfaces will be wet cleansed as required to maintain a clean site;

Bins and other waste vestibules will be enclosed / lidded;

GPF Lewis will ensure that cement and other fine powder materials are delivered bagged to minimise dust and stored in suitably to minimise excessive dust creation. The PC will ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;

RVT Group with the Appointed Demolition contractor will develop and implement a **Dust Management Plan** (DMP), which will include measures to control other emissions, approved by the GPF Lewis.

GPF Lewis will Undertake daily on-site and off-site inspection and record in log / registers that will be made available to the local authority when asked.

GPF Lewis will carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an "inspection log" available to the local authority when requested.

Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

GPF Lewis will record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

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.

Due to the nature of the works and the minor requirement for piling **(only 8 No piles** as part of the contract works) & ground works it is not envisaged that there will be a significant amount of dirt or dust that may be spread on to the public highway, however as a mitigation and in line with the Dust Management Plan:

Dust (and other particulate) Mitigations

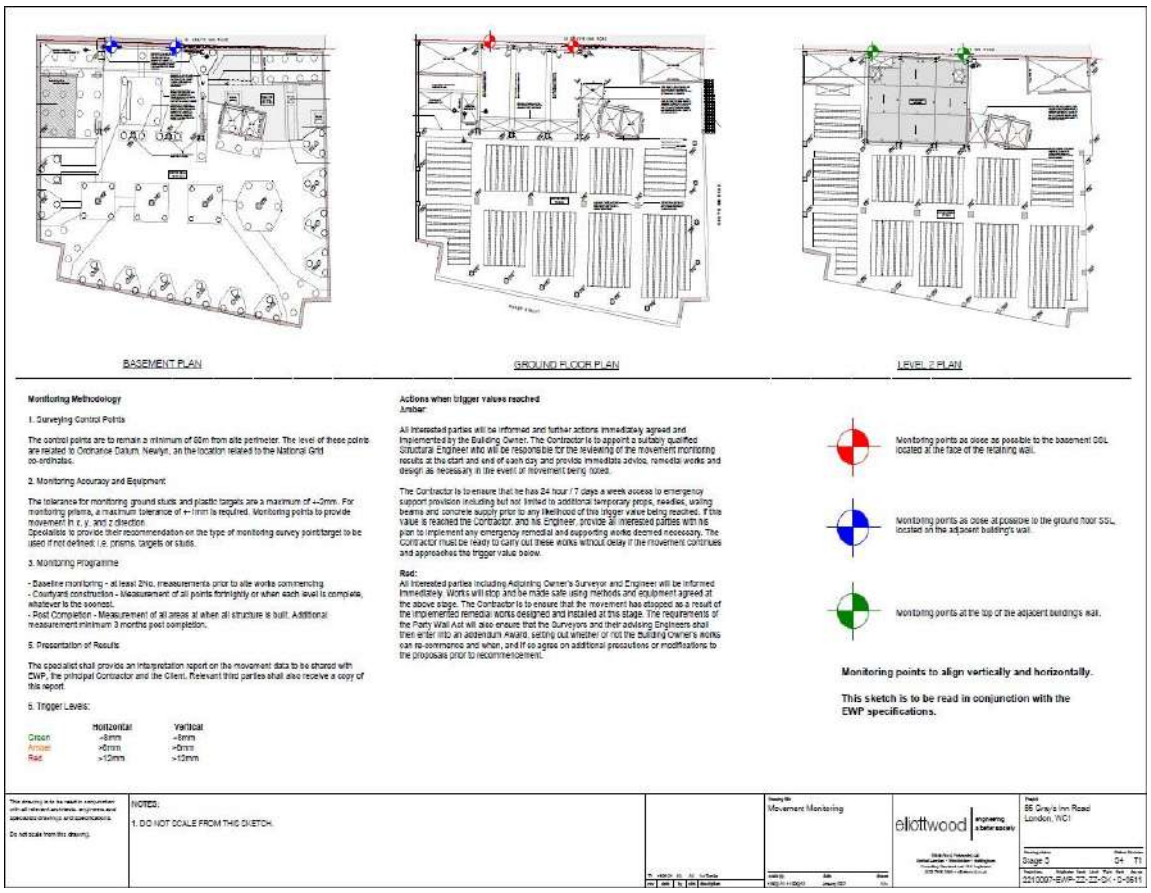
Specific Dust measures should be considered as:

- Dust levels be controlled by the constant monitoring of air quality levels;
- Agreed trigger levels for Dust and other particulates will be agreed with the council in advance of construction;
- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities including grinding and cutting internally and externally of the building (sheeting to scaffold);
- The contractor will erect and maintain throughout the construction period temporary hoarding where suitable around all external working areas to assist in the screening of noise and dust generation from low-level sources;
- All solid-state hoarding and site fencing and barriers will be maintained using controlled wet methods for cleansing and avoiding water runoff from the activity;
- Remove materials that have a potential to produce dust from site as soon as possible;
- 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.
- Avoid scabbling (roughening of concrete surfaces) if possible, to minimise dust
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes, conveyors and covered skips.
- Minimise drop heights for loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- Minimise dust works on site and utilise where possible prefabricated assembly off site.
- Further details of the full dust assessment and management procedures are attached in appendices and set out within the Vangaurdia report (Air quality assessment).

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

- RVT Group has been employed by GPF Lewis and a Noise & dust management plan is being produced for the project.

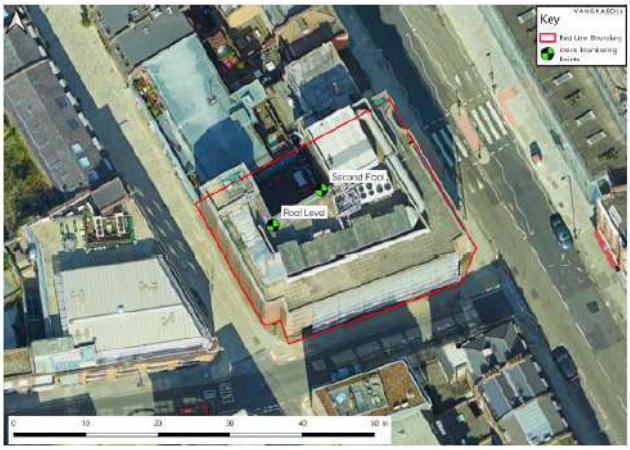
Movement / vibration monitoring devices are being placed along party walls and internal columns which will be checked daily/weekly throughout the duration of the build. Proposal is in line with the **Structural Engineers Elliot and Wood.**



The below map demonstrates the location of the two dust monitoring systems which were installed on the site on the 3rd March 2022 to the 8 June 2022. The dust monitoring systems has been in place since this date and 3 months' worth of data has been collected to establish the baseline information. This can be found in the below tables.

Two dust monitoring systems were installed on the site boundary as demonstrated. The positions were chosen due to the site constraints, to represent the nearest sensitive receptors during any demolition/ construction works. Furthermore, they were also at these locations as to ensure they are across a up and down 'wind of prevailing' wind direction. The dust monitoring system comprised two Turnkey Orisis MCERTS (PM_{10}) certified airborne particle monitor.

Figure 1 Second Floor Monitor PM_{10} Concentrations



The below results cover the period between the 3rd March to the 8th June 2022 for the 15 minute average concentrations. The first table summarises the 15 minute average PM_{10} concentrations for the monitor located on the second floor, with the second table doing so for the monitor located on the roof. The concentrations have been considered within the typical working hours: Monday – Friday 08:00 – 18:00 and Saturday 08:00 – 13:00.

Table 1 Second Floor Monitor PM_{10} Concentration ($\mu g/m^3$)

	Weekday (08:00 – 18:00)	Saturday (08:00 – 13:00)
Maximum Recorded Concentrations	1280.8	30.8
Average Recorded Concentration	21.7	12.0

Table 2 Roof Level Monitor PM_{10} Concentration ($\mu g/m^3$)

	Weekday (08:00 – 18:00)	Saturday (08:00 – 13:00)
Maximum Recorded Concentrations	93.6	27.5
Average Recorded Concentration	12.3	12.0

Figure 2 presents the 15 minute average PM_{10} concentrations for the second floor monitor between 08:00 – 18:00 Monday to Friday and between 08:00 – 13:00 on Saturdays. Figure 3 presents this for the monitor located on roof level.

Figure 3 Roof Level Monitor PM_{10} Concentrations

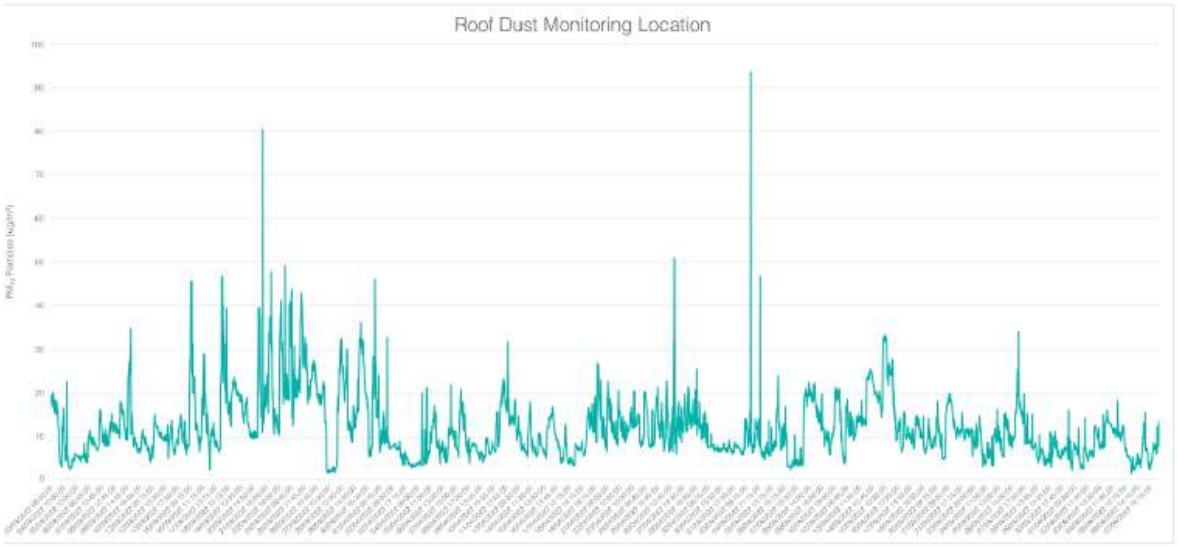
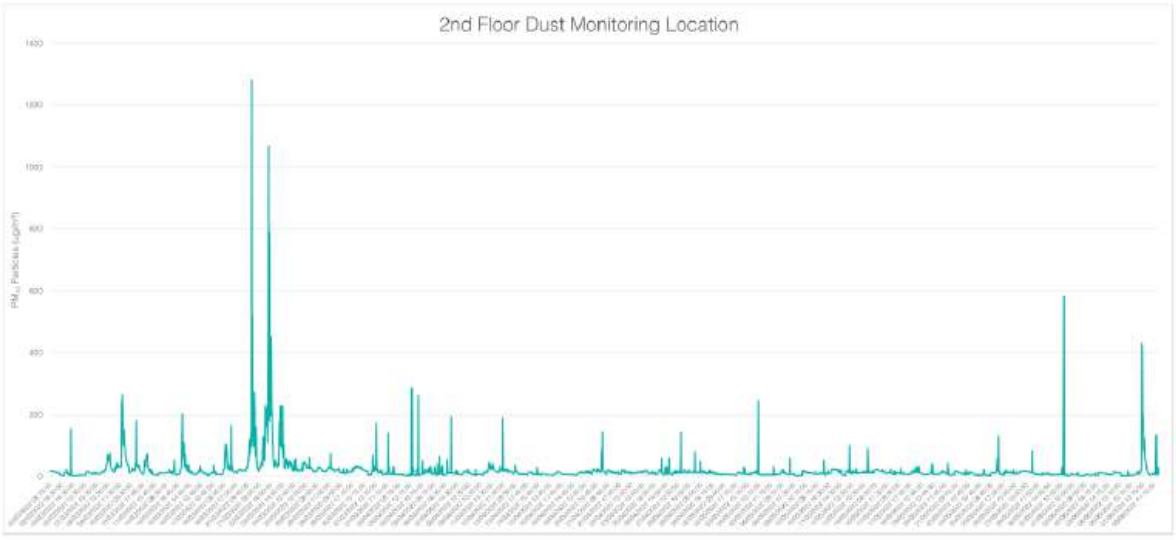


Figure 2 Second Floor Monitor PM_{10} Concentrations



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**.

The Dust monitoring pre-commencement on site was carried out by the client of 85 Grays Inn Road project in line with the below and part of the planning agreement

A Construction Dust Risk Assessment was carried out in line with the GLA (2014) The Control of Dust and Emissions During Demolition and Construction 2014 (SPG), and the IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction documents. This was set out in the Air Quality Assessment (VC-103575-AQ-RP-0001 R00). The dust impact risk levels without mitigation were identified, which were used to inform specific mitigation measures to be implemented. The assessment accounted for sensitive receptors in the local area, which are residential and office workers.

- Institute of Air Quality Management (IAQM) (2018): 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, v1.1'
- Greater London Authority (2014) The Control of Dust and Emissions from Construction and Demolition SPG
- IAQM (2018) Guidance on Monitoring in the Vicinity of Demolition and Construction Sites v1.1

If you need anything else let me know.

Thanks,

SIMON GRUBB
ASSOCIATE

21 Station Road West
Oxted, Surrey
UK. RH8 9EE

Office +44(0) 1883 718690 Mob: 07712523865
www.vanguardia.co.uk

VANGUARDIA

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.)

A checklist of measures that will need to be implemented during the construction phase were provided in Appendix B of the Air Quality Assessment (VC-103575-AQ-RP-0001 R00), using Appendix 7 of the GLA (2014) The Control of Dust and Emissions During Demolition and Construction 2014 (SPG).

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.

The results of the Air Quality Assessment has demonstrated that the site will be considered a 'Medium Risk' – therefore, in line with the Greater London Authority (GLA) (2014) The Control of Dust and Emissions during Construction and Demolition SPG, the following is required:

- Determine the prevailing wind direction across the site using data from a nearby weather station;
- If measuring air quality along a line; Set up a line across the site according to the direction of the prevailing wind; and
- Operate a minimum of two automatic particulate monitors to measure PM_{10} levels at either end of the line - either inside or outside the site boundary. These instruments should provide data that can be downloaded in real-time by the local authority. The monitors used will be Turnkey Osiris dust monitors, which have an independent verification of performance (Environment Agency's MCERTS scheme).

Two dust monitors will operate across the line of the prevailing wind direction, both during the 3-month prior to commencement of works on site and the duration of the construction of the development.

Monthly reports to be sent 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.

Trigger levels to be set against those set out in the IQM (2018) Guidance on Monitoring in the Vicinity of Demolition and Construction Sites document – based on more up to date research than that set out in the GLA (2014) The Control of Dust and Emissions During Demolition and Construction 2014 (SPG) and against the baseline monitoring (once completed).

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).

Rodents and Vermin

GPF Lewis will ensure that the risk of infestation by pests or vermin is minimised. Adequate arrangements for disposing of food waste or other material attractive to pests will be implemented.

If infestation occurs GPF Lewis will ensure that such action as decided upon by the Environmental Health Officer is taken within the agreed time scales.

To minimise the potential of infestation, the existing buildings will be assessed for the presence of rodents and vermin prior to the demolition and construction works. Should any rodent or vermin issues be present, a specialist contractor will be appointed to remove and manage the infestation.

The Contractor will ensure that periodic reviews of the site are undertaken by a specialist contractor to ensure that rodent infestations are minimised and can be removed quickly to avoid the associated health issues affection the workforce and the neighbouring properties and occupants.

GPF Lewis will hold all “job” receipts for pest control to provide in a timely manner on request.

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

Asbestos

Asbestos has been identified as per the survey details provided. The asbestos is Compressed Asbestos Fibre (CAF) gaskets. Identified to the bolted flange positions to pipework within B.35, Shower Room, B.36 Plant Room and B.37 Gas Meter Room in the Basement.

Our Site Managers will inform all persons on site at induction training what to do if they identify any suspect materials. All operatives at induction stage will be informed to proceed with caution at all times when breaking into the fabric of the building, despite the existing surveys that have been carried out. All operatives will be requested to report any suspect hazard material to allow further investigation and confirmation.

In the event that any ACMs are discovered and should it be possible to remove the ACMs as 'Unlicensed Tasks' we will comply with the Health and Safety Executives Asbestos Essentials taken from the HSE website that help explain how to carry out certain work with asbestos that are not licensed under the Control of Asbestos Regulations 2012.

Please note that any works exceeding that which are covered in the Asbestos Essentials may require licensed contractors to remove.

Other than asbestos containing materials. No hazardous substances are known to have been used when the premises were developed. However, as Principal Contractor, we will proceed with caution.

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.

Within the Induction site rules will be established with a yellow / red card system for penalty, with warnings for minor infraction leading to red cards for removal from site.

All penalties will be recorded in a site log that then can be provided to the Council in a timely manner on request.

In line with best practice the following will be provided a yellow card, or red depending on severity:

- Bad language;
- Un-necessary shouting;
- Lewd behaviour (including whistling);
- Littering;
- Spitting;
- And boisterous behaviour.

(List not exhaustive but to provide guidance).

Criminal behaviour will be reported to the police and the responsible party terminated, this includes:

- Violence;
- Vandalism;
- Substance abuse;
- Sexualised misconduct.

(List not exhaustive but to provide guidance).

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 : 06.2022 - 08.02.2023.

b) Is the development within the CAZ : Yes

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

d) Please confirm that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered: **85 Grays Inn Road Project has been registered & all plant will be to follow.**

e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection: **Confirmed this will be done**

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: **Yes**.

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.

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: Pieter Snyman

Date: 20.06.2022

Print Name: Pieter Snyman.

Position: Project Manager

Please submit to: planningobligations@camden.gov.uk

End of form.

V2.7

Camden

Project Anatomy
85 Grays Inn Road
London

Environmental Noise Survey and Plant Noise Assessment

28809/PNA1/Rev1

07 July 2021

For:

Clearbell Capital LLP

Hann Tucker Associates
Consultants in Acoustics Noise & Vibration

Head Office: Duke House, 1-2 Duke Street, Woking, Surrey, GU21 5BA (t) +44 (0) 1483 770 595
Manchester Office: First Floor, 346 Deansgate, Manchester, M3 4LY (t) +44 (0) 161 832 7041
(w) hanntucker.co.uk (e) enquiries@hanntucker.co.uk

Hann Tucker Associates

Environmental Noise Survey and Plant Noise Assessment Report 28809/PNA1/Rev1

Document Control

Rev	Date	Comment	Prepared by	Authorised by
1	07/07/2021	First update		
			Adam Kershaw Senior Associate BSc(Hons), MIOA	Simon Hancock Director BEng(Hons), CEng, MIMechE, FIOA
0	18/05/2021	Draft first issue		
			Adam Kershaw Senior Associate BSc(Hons), MIOA	Simon Hancock Director BEng(Hons), CEng, MIMechE, FIOA

Hann Tucker Associates

Environmental Noise Survey and Plant Noise Assessment Report 28809/PNA1/Rev1

Contents

Attachments

1.0 Introduction

Clearbell Capital LLP on behalf of Grays Property Holdings have acquired 85 Grays Inn Road, and are proposing to undertake a substantial package of refurbishment and reconfiguration works in order to reposition the building to meet the growing needs of the life sciences sector.

Hann Tucker Associates have been appointed to undertake a noise survey to establish the existing environmental noise levels around site, determine the limiting plant noise criteria in accordance with the Local Authority criteria, BREEAM, and to undertake a preliminary review of the proposed building services plant items.

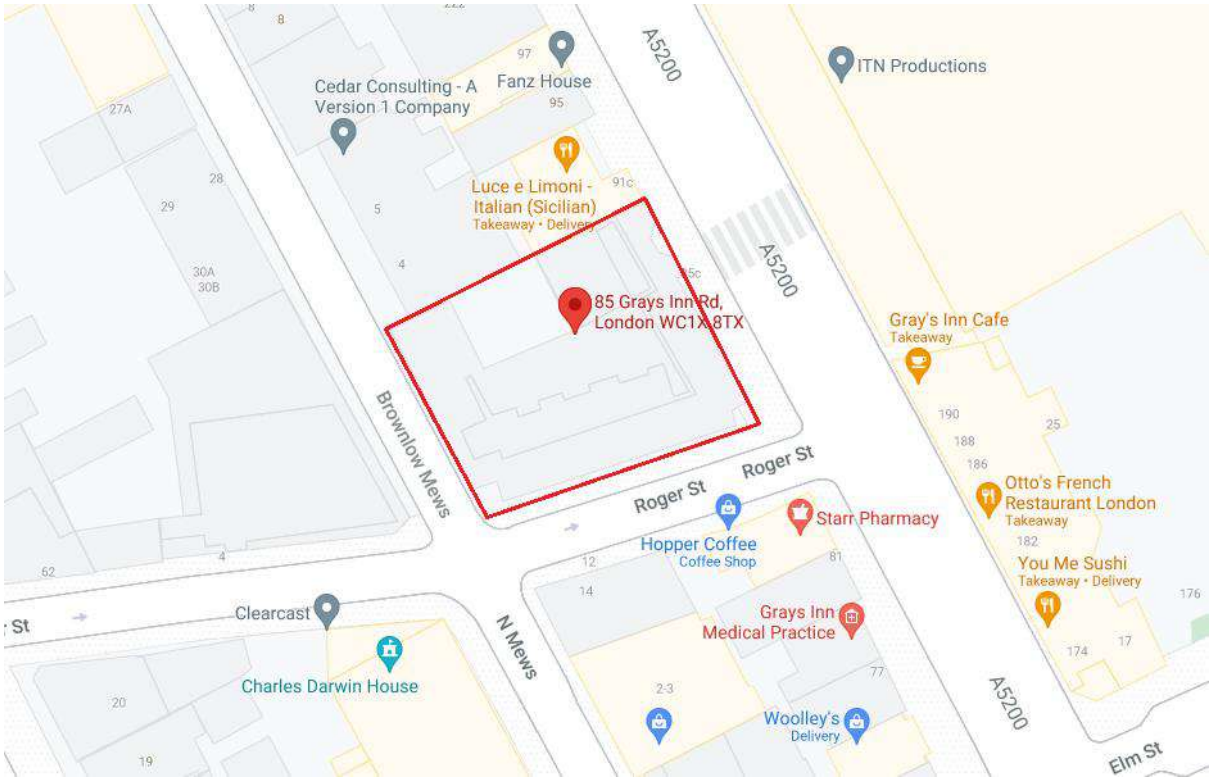
This report presents the methodology and findings of our noise survey, provides a plant noise assessment with regards to achieving the desired criteria and proposes acoustic mitigation measures was appropriate.

2.0 Site Description

The building is set within the Bloomsbury conservation area at the junction of Grays Inn Road and Roger Street in the London Borough of Camden.

85 Grays Inn Road is a commercial office building set over 6 storeys from basement, ground and up to Level 4. It currently has extensive building services plant located at roof level with a large louvred perimeter screen.

The approximate site boundary is outlined red on the plan below.

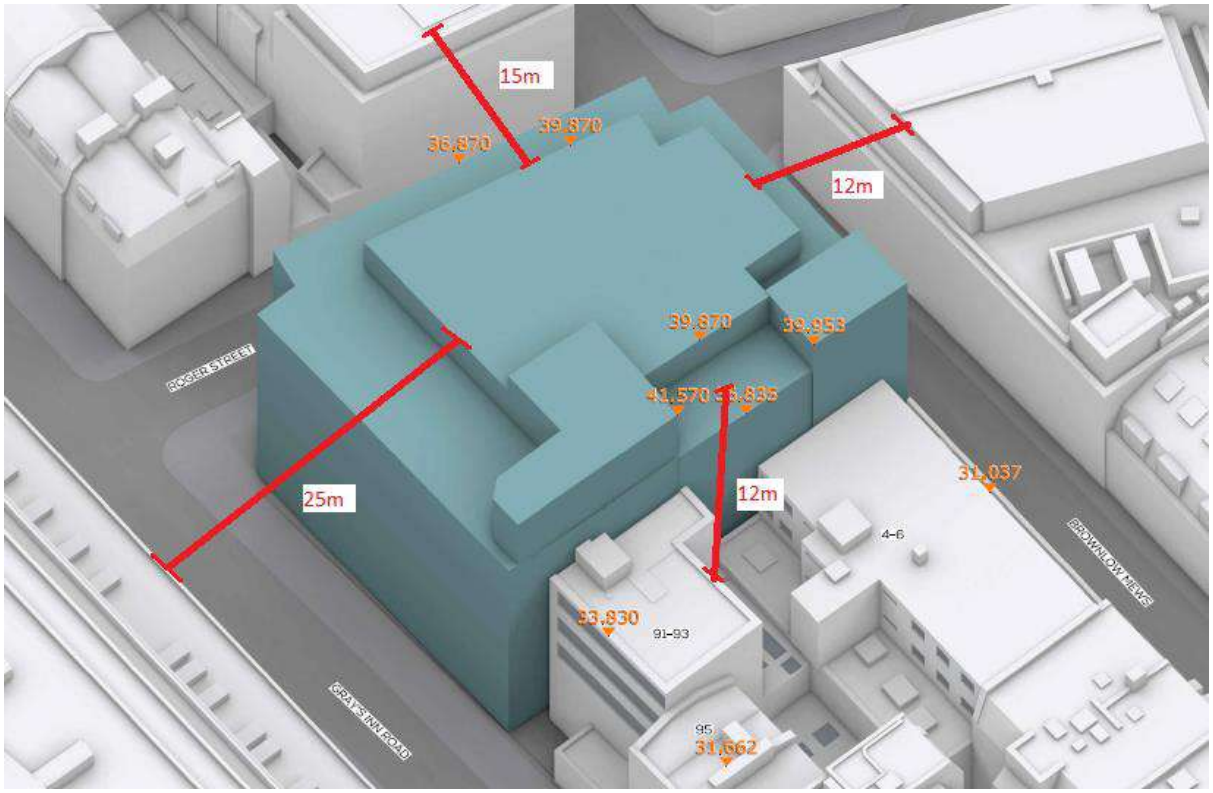


Location Map (maps.google.co.uk)

To the north is predominantly residential property up to 5-storeys in height with commercial/retail use at ground floor. To the west the closest property is a 3-storey office building on the opposite side of Brownlow Mews. To the east is a mixture of residential, commercial, and retail property up to around 6-streys in height, and the ITV Studios is a large office building of 8-storeys in height. To the south is a 4-storey residential building on the opposite side of Roger Street.

The proposed refurbishment works at roof level will make the building services plant on 85 Grays Inn Road, at least two storeys higher than the closest neighbouring residential buildings.

The site plan below provides an approximate illustration of the horizontal distances around site to neighbouring buildings.



Site Plan (Gordon Ingram Associates)

3.0 Methodology

3.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 12:00 hours on 26/04/2021 to 13:00 hours on 27/04/2021.

Owing to the nature of the survey, i.e. unmanned, it is not possible to accurately comment on the weather conditions throughout the entire survey period. However, at the beginning and end of the survey period the wind conditions were calm, and the sky was generally clear with no rain. We understand that throughout the survey period the weather conditions were similar to this and as such are deemed suitable for measurement purposes.

Measurements were taken continuously of the A-weighted (dBA) L_{90}, L_{eq} and L_{max} sound pressure levels over 15-minute periods.

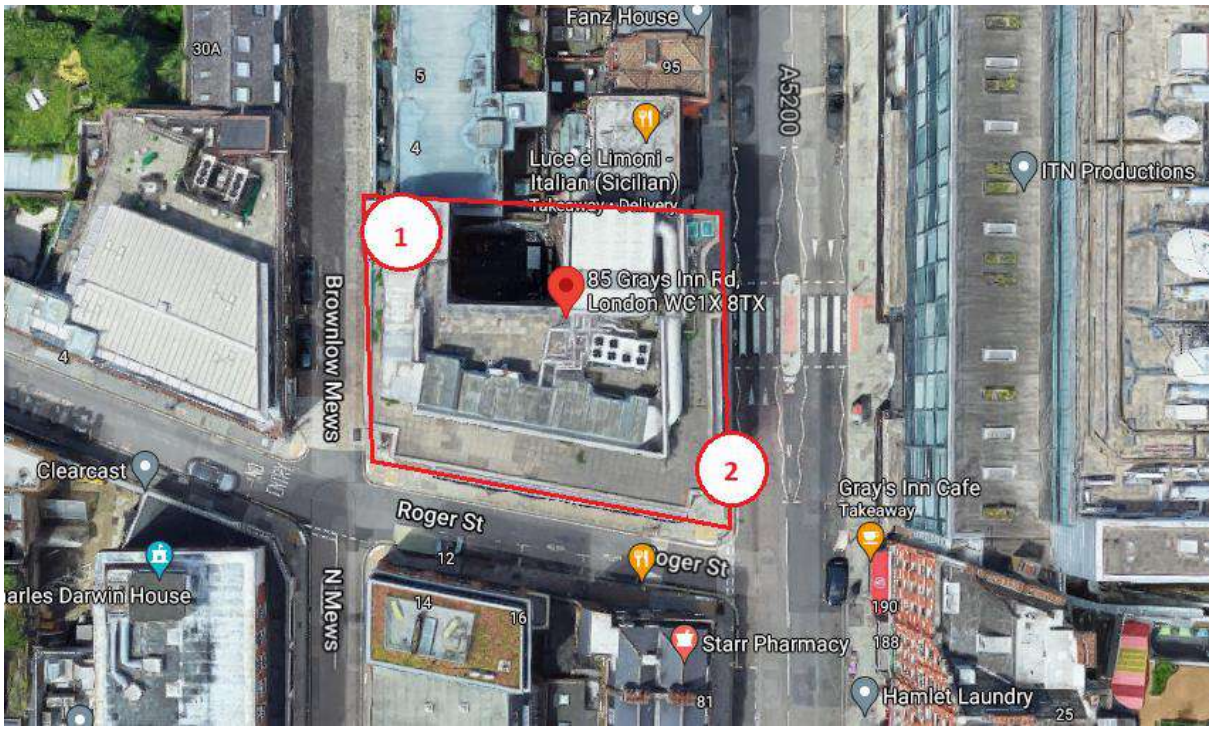
For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

3.2 Measurement Positions

The noise level measurements were undertaken at two positions around the development site. The positions are described in the table below:

Position No.	Description
1	The sound level meter was located at roof level to towards the north west corner. The microphone was attached to an extension pole which was attached to the roof level perimeter railings overlooking the quietest rear area of site.
2	The sound level meter was located at 2nd floor level to the east of site. The microphone was attached to an extension pole which protruded out of a 2nd floor window overlooking Grays Inn Road.

The approximate measurement locations are shown on the plan below.



Plan Showing Unmanned Measurement Positions (maps.google.co.uk)

3.3 Instrumentation

The instrumentation used during the survey is presented in the table below:

Description	Manufacturer	Type	Serial Number	Lab Calibration
Type 1 ½" Condenser Microphone	PCB	377B02	135744	20/01/2020
Preamp	PCB	PRM902	4812	21/01/2020
Type 1 Data Logging Sound Level Meter	Larson Davis	824	3700	21/01/2020
Type 1 ½" Condenser Microphone	ACO Pacific	7052E	50282	19/10/2020
Preamp	Larson Davis	PRM902	4158	19/10/2020
Type 1 Data Logging Sound Level Meter	Larson Davis	824	3804	19/10/2020

Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable, and each microphone was fitted with a windshield. Each sound level meter with extension cable was spot calibrated prior to and on completion of the survey. No significant change was found to have occurred (no more than 0.1 dB).

4.0 Results

The results have been plotted on Time History Graph 28809/TH1 and 28809/TH2 enclosed, presenting the 15-minute A-weighted (dBA) L_{90}, L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

The following table presents the lowest measured dBA L_{90} background noise levels during the survey:

Position	Lowest measured L_{90} background noise level (dB re 2.0 x 10^{-5} Pa)	
	Daytime (07:00-23:00)	Night-Time (23:00 – 07:00)
1	41 dBA	40 dBA
2	45 dBA	42 dBA

The daytime $L_{eq(16\text{-}hour)}$ and night-time $L_{eq(8\text{-}hour)}$ dBA noise levels for each position are presented in the table below.

Position	Daytime $L_{eq(16\text{-}hour)}$	Night-Time $L_{eq(8\text{-}hour)}$
1	68 dBA	60 dBA
2	54 dBA	46 dBA

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately describe specific noise events throughout the entire survey period. However, at the beginning and end of the survey period the dominant noise source was noted to be road traffic from Gray's Inn Road and the surrounding area.

We note there were some roadwork activities on Grays Inn Road during the survey period and with consideration for the current Covid-19 pandemic, we have compared our measurements to historic data obtained from working on 154 Grays Inn Road in 2019. We note these measurements are within around 2dB of the relevant parameters compared to the site located around 100m further south along Gray Inn Road.

5.0 Plant Noise Criteria

The site lies within London Borough of Camden's jurisdiction. We understand they would usually impose a planning condition to control plant noise as follows.

"Noise levels at a point 1 metre external to sensitive facades shall be at least 10dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 10dB(A) below the LA90, expressed in dB(A).

Reason: To safeguard the amenities of the adjoining premises and the area generally in accordance with the requirements of policies A1 and A4 of the Camden Local Plan 2017."

On the basis of the above guidance, together with the results of the environmental noise survey, we propose that the following plant noise emission criteria be achieved at 1 metre from the nearest, noise sensitive residential windows with all plant operating simultaneously.

Plant Noise Emission Criteria (dB re $2x10^{-5}$ Pa)		
Position	**Daytime (07:00 – 23:00 hours)**	**Night-time (23:00 – 07:00 hours)**
1	31 dBA	30 dBA
2	35 dBA	32 dBA

It should be noted that BREEAM plant noise emission criteria is less stringent than that of Camden Council. Therefore by achieving the above criteria the associated BREEAM credits should also be achieved.

6.0 Plant Noise Assessment

KJ Tait Engineers have provided us with preliminary plant selections, manufacturer's noise data and site layout drawings. At this early stage of the project, our report aims to provide suitable guidance for controlling plant noise emissions. As the project evolves plant selection and layouts could change so this report will be updated and reissued when necessary.

The proposed refurbishment works at roof level will make the building services plant on 85 Grays Inn Road roof around two storeys higher than the closest neighbouring residential buildings. Our calculations consider this along with the approximate horizontal measurements shown on the site plan above.

Where our assessment describes an acoustic louvered perimeter screen, it should be noted we have used the acoustic data from a 300mm thick IAC SL300 louver in our calculations. The product data sheet link is provided below, though other manufacturers should be able to provide acoustically similar products if necessary.

https://iacacoustics.global/wp-content/uploads/Model-SL-300-Slimshield-Acoustic-Louvres.pdf

Our report also advises where it might be necessary to provide areas of solid imperforate barrier. The construction of which would usually comprise sheet steel or plywood material with minimum mass per unit area of 10kg/m^2. This of course would need to be weatherproof and fireproof etc. The height of acoustic louver or solid screening should initially be shown 500mm taller than the tallest items of plant that require screening. It should also be noted that in the most stringent areas a thicker solid barrier may be required which comprises an acoustically absorbent inner lining. The exact details of the above can be established during more detailed design stage.

Discussions with the design team have suggested the courtyard rear area of the building could

be infilled with a full height wall, such that noise from items of building services plant positioned on various gantry floors above the courtyard can be suitably attenuated. For now we have assumed the acoustic performance of the solid wall is sufficient to attenuate plant noise from within the gantry/courtyard locations to the nearest residential dwellings, and all air moving plant will be ducted to roof level. We do not envisage the acoustic performance of the solid wall to be particularly onerous and this will be determined at a later date.

6.1 Primary Heating & Cooling Plant - Roof Level

We understand the following items of plant are proposed at roof level.

Plant Description	Location	Qty	Plant Make	Model Number
Air Source Heat Pumps (ASHP)	Roof	2	Daikin	EWYT265B-XRA2

The manufacturers data sheets state the following sound pressure levels measured at 1m.

Plant Description	Sound Pressure Level (dB re $2x10^{-5}$ Pa) at 1 metre at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Daikin ASHP	65	68	63	63	61	61	54	45	66

These plant items are proposed to be located at the south side of the roof level at least 15m away from neighbouring residential buildings. The building will be 2-storeys taller than the neighbouring buildings, and the roof plant area appears to be set back far enough such that the edge of the building would provide line of sight screening of around -5dB.

The distance loss, the acoustic louvered perimeter screen and the building edge screening has been considered in our calculations. The table below presents the predicted noise level due to the ASHP at the nearest residential windows.

Description	Sound Pressure Level (dB) at Octave Band Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Daikin EWYT265B-XRA2	65	68	63	63	61	61	54	45	67
2x Units	+3	+3	+3	+3	+3	+3	+3	+3	+3
Distance loss 15m	-24	-24	-24	-24	-24	-24	-24	-24	-24
Line of sight building edge screening	-5	-5	-5	-5	-5	-5	-5	-5	-5
IAC SL300 louver	-6	-7	-10	-12	-18	-18	-14	-13	-14
At residential	33	35	27	25	17	17	14	6	27

The calculations above suggest a noise level of approximately 27dBA would be incident at the nearest residential windows. This value complies with the night-time criteria of 30dBA, however, the cumulative effect of all items of plant will need to be considered and is discussed later in this report.

6.2 Standby Generator - Roof Level

We understand the following generator is proposed at roof level.

Plant Description	Location	Qty	Plant Make	Model Number
Standby Generator with Acoustic Enclosure Package	Roof	1	FG Wilson	275-2

The generator is proposed to be located in the tenant area. The manufacturers data sheet states the following sound pressure levels (dBA) measured at various distances and % load.

FG Wilson 275-2						
Measurement Distance	15m	15m	7m	7m	1m	1m
Load	75%	100%	75%	100%	75%	100%
dBA	61	62	67	68	75	76

The generator is 62dBA if measured 15m away at 100% load. The loss from an acoustic louvre would be around -14dBA, and the edge of building screening loss could be around -5dBA. As a result the predicted noise level would be 43dBA at 15m. This exceeds the criteria by at least 13dBA.

To suitably reduce the noise by an additional 13dBA the design will need to consider taller solid barrier screening around it, possibly with acoustically absorbent inner lining, and maybe need to move it further away from the nearest residential building. For the purposes of planning this is not particularly onerous and can be dealt with during detailed design stage.

6.3 Core Air Handling Unit - Roof Level

We understand the following AHU is proposed at roof level.

Plant Description	Location	Qty	Plant Make	Model Number
Air Handling Unit (AHU)	Roof	1	Swegon Gold	FRX050

The manufacturers data sheets state the following sound levels.

Plant Description	Sound Power Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
To supply air duct	72	63	54	56	53	56	56	57	63
To outdoor air duct	69	64	55	45	37	39	37	41	52
To extract air duct	73	64	57	60	57	61	61	62	67
To exhaust air duct	68	60	53	57	42	41	38	41	56
To surroundings	68	60	53	57	42	41	38	41	56

This AHU is proposed to be located in a central position towards the north roof level at least 15m away from neighbouring residential buildings. The plant will be 2-storeys higher than the neighbouring buildings and a solid barrier is possible along the north perimeter boundary of this area.

The breakout sound power level shown above ('To surroundings') has been converted to sound pressure level at 1m. The additional distance loss and barrier screening has been considered in our calculations. The table below presents the predicted noise level due to the Core-AHU breakout at the nearest residential windows.

Description	Sound Pressure Level (dB) at Octave Band Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Breakout to 1m	50	42	35	39	24	23	20	23	38
Barrier loss at least	-10	-10	-10	-10	-10	-10	-10	-10	-10
Distance loss to 15m	-24	-24	-24	-24	-24	-24	-24	-24	-24
At neighbours	16	8	1	5	0	0	0	0	4

The calculations above suggest an AHU breakout noise level of approximately 4dBA would be incident at the nearest residential windows. This value comfortably complies with the night-time criteria of 30dBA, however, we must also consider noise from the atmospheric fresh air intake and exhaust discharge duct terminations.

Our calculations have initially considered these air paths are located outside of the effective zone of the perimeter barrier, i.e. they may need to penetrate the barrier to the north for air flow reasons. As such we have calculated preliminary requirements for atmospheric induct attenuators as follows.

Description	Minimum Insertion loss (dB) at Octave Band Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Exhaust discharge	3	7	14	21	27	26	17	12
Fresh intake	2	5	11	17	20	19	12	10

We would suggest the above attenuators are not particularly onerous and once exact positioning is determined might be able to be reduced or omitted, especially if they can be located inside the effective zone of the perimeter solid barrier.

6.4 Fume Extract Fans - Roof Level

We understand the following extract fans are proposed at roof level.

Plant Description	Location	Qty	Plant Make	Model Number
Fume Extract Fans	Roof	6	Central Fans	CMVeco 160/160

The manufacturers data sheet states the following sound data.

Plant Description	Sound Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Induct sound power	63	66	73	76	72	68	64	53	77
Breakout SPL at 1m	Frequency data unknown								61

These plant items are currently proposed to be a horizontal distance of approximately 15m away from neighbouring residential buildings.

The plant area will be 2-storeys higher than the neighbouring buildings and we understand a solid barrier can be located adjacent to the fume fans, such that significant acoustic attenuation can be provided.

The distance loss, the solid barrier perimeter screen and the building edge effect has been considered in our calculations. The table below presents the predicted noise level due to the breakout noise from the Fume Fans at the nearest residential windows.

Description	Sound Pressure Level (dB) at Octave Band Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Breakout SPL at 1m	Frequency data unknown								61
6x Units	"								+8
Distance loss 15m	"								-24
Barrier and edge loss at least	"								-20
At neighbours	"								25

The calculations above suggest a noise level of approximately 25dBA would be incident at the nearest residential windows due to the breakout noise from the fume fans. This value comfortably complies with the night-time criteria of 30dBA, however, the cumulative effect of all items of plant will need to be considered and is discussed later in this report.

In addition, we must also consider noise from the atmospheric discharge flue terminations which are proposed to be around 8m higher than normal roof level. We estimate the vertical discharge flues would be a total distance of around 25m away from any residential windows.

Our preliminary calculations suggest the noise from the fume flues would significantly exceed the criteria by circa 20dBA. Therefore, induct attenuators would be required with the following minimum insertion losses.

Description	Minimum Insertion loss (dB) at Octave Band Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Fume flue discharge	3	7	14	21	27	26	17	12

The above attenuator performance should easily be achieved with 1200mm long normal attenuators for air handling units. For fume extract fans we understand the construction and therefore acoustic performance is quite different to 'normal' attenuators, and as such they could be considerably larger.

An additional benefit that might need to be considered is splitting the location of the 6 flues. If 3 flues could be located far enough away from the other flues a reduction of 3dB attenuation could probably be considered.

Initially it might be most productive for KJ Tait to see if the above attenuation can be achieved and integrated into the system. Following this we would be happy to consider alternative mitigation measures.

6.5 Tenant Roof Plant Area

Currently an area has been designated at roof level to house potential future tenant building services plant items and the generator described above.

The tenant plant is unknown at this stage and is anticipated to include external condenser units for cooling purposes. Whilst condenser units located within designated plant areas with acoustic louvered screening is usually suitable, the cumulative contribution of all landlord and tenant plant noise will need to be considered together and be shown to comply with Local Authority plant noise emission criteria.

As such it is probably useful for KJ Tait to suggest a selection of potential 'worst case' items such that we can determine if the acoustic louvered perimeter screen area is likely sufficient, or if there would be a need to provide a solid barrier which of course may have implications for the required airflow.

It might also be productive if KJ Tait could show areas along the perimeter barrier that they believe could be solid and not detrimental to airflow to nearby plant items. Note, acoustically a solid barrier has greater attenuation than louvered screen etc. This might help us to proposed areas to relocate certain plant items.

6.6 Lab AHUs at 1st and 4th Floor Gantry

We understand the following AHUs are proposed at 1st and 4th floor of the infill/gantry area.

Plant Description	Location	Qty	Plant Make	Model Number
Air Handling Unit (AHU)	1st and 4th floor	2	Swegon Gold	FRX060

The manufacturers data sheet states the following sound levels.

Plant Description	Sound Power Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
To supply air duct	80	75	75	76	73	71	69	69	79
To outdoor air duct	77	76	76	65	57	54	50	53	69
To extract air duct	80	79	80	68	60	58	57	60	73
To exhaust air duct	85	80	82	84	81	80	78	78	87
To surroundings	76	68	61	65	50	49	46	49	64

The two AHUs are proposed to be located on gantry platforms above the courtyard area. This gantry/courtyard area is proposed to be enclosed/infilled by a full height wall. The horizontal distance from an AHU to the nearest residential windows is approximately 10m.

The breakout sound power level shown above ('To surroundings') has been converted to sound pressure level at 1m. The additional distance loss and barrier screening is considered in our calculations. The table below presents the predicted noise level due to the Lab AHUs breakout noise at the nearest residential windows.

Description	Sound Pressure Level (dB) at Octave Band Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Breakout at 1m	58	50	43	47	32	31	28	31	46
2x Units + reverberant space correction	6	6	6	6	6	6	6	6	6
Distance loss to 10m	-20	-20	-20	-20	-20	-20	-20	-20	-20
Barrier loss	-10	-10	-10	-10	-10	-10	-10	-10	-10
At residential	34	26	19	23	8	7	4	7	22

The calculations above suggest an AHU breakout noise level of approximately 22dBA would be incident at the nearest residential windows. This value comfortably complies with the night-time criteria of 30dBA, however, we must also consider noise from the atmospheric fresh air intake and exhaust discharge duct terminations discussed later in this report.

In addition to the breakout noise we must also consider the noise from the atmospheric terminations located at roof level.

Our calculations have initially considered these air paths are located outside of any effective zone of an acoustic barrier. As such we have calculated preliminary requirements for atmospheric induct attenuators as follows.

Description	Minimum Insertion loss (dB) at Octave Band Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Exhaust discharge	8	16	28	43	47	47	39	22
Fresh intake	6	13	23	37	43	44	35	20

The above attenuators can be reviewed once exact positioning is determined. The performance of which might be able to be greatly reduced, especially if they can be located inside the effective zone of a perimeter barrier or behind acoustic louvered space.

6.7 Cumulative Plant Noise

Our assessment and calculations have included for the cumulative effects of all plant operating at the same time in the approximate locations shown on the preliminary KJ Tait and BMJ drawings.

Once the design team have had chance to consider the implications of the acoustic mitigation measures proposed, we would be happy to review in more detail proposals for alternative locations and configurations.

As the design drawings evolve we will be able to determine more accurate distances and screening effects and thus update this report.

In most instances moving items of plant further away from residential property will increase the distance loss and to some extent increase the acoustic attenuation available from barrier screening.

7.0 Conclusions

A daytime and night-time environmental noise survey has been undertaken in order to determine the plant noise emission criteria for planning purposes.

Based on the results of the survey plant noise emission criteria have been presented with reference to Local Authority requirements. We have also reviewed the manufacturers plant noise data to determine the likely plant noise emissions at the nearest residential noise sensitive windows.

The preliminary assessment indicates that various items of plant would not achieve the requirements of the Local Authority without suitable acoustic mitigation measures.

We have therefore proposed various acoustic mitigation measures, including acoustic louvered perimeter screening, solid barriers, infill walls and induct attenuators, which are to be included in the design.

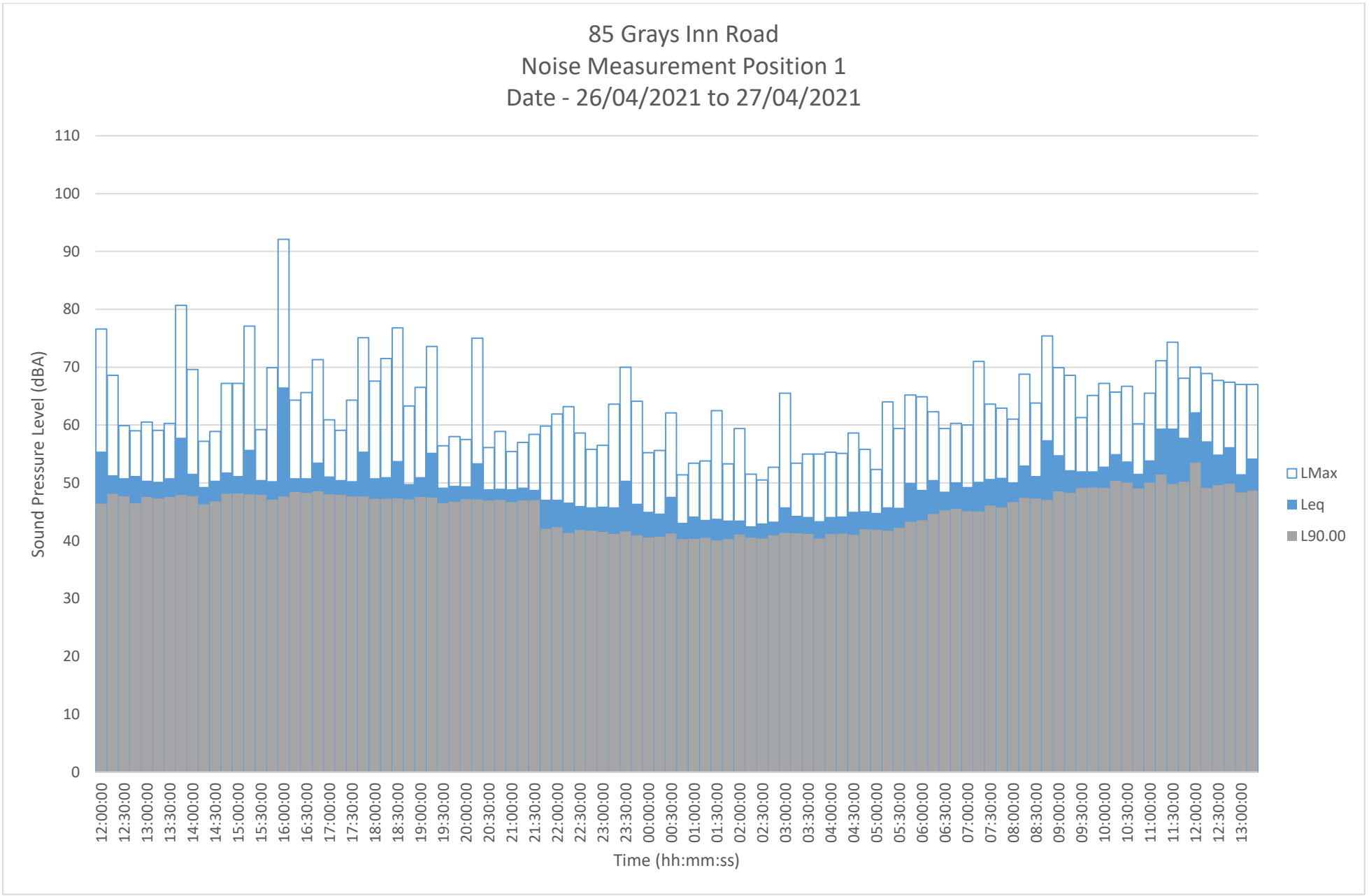
We believe with the proposed mitigation measures the plant noise would be compliant with Camden Council requirements. It should be noted that BREEAM plant noise emission criteria are less stringent than that of Camden Council. Therefore, by achieving the council criteria the associated BREEAM credits should also be achieved.

As the project proposals and layout drawings evolve we would be happy to consider any changes and update this report.

Appendix A

The acoustic terms used in this report are defined as follows:

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).
dBA	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted. It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.
$L_{90,T}$	L_{90} is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.
$L_{eq,T}$	$L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.
L_{max}	L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.
L_p	Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).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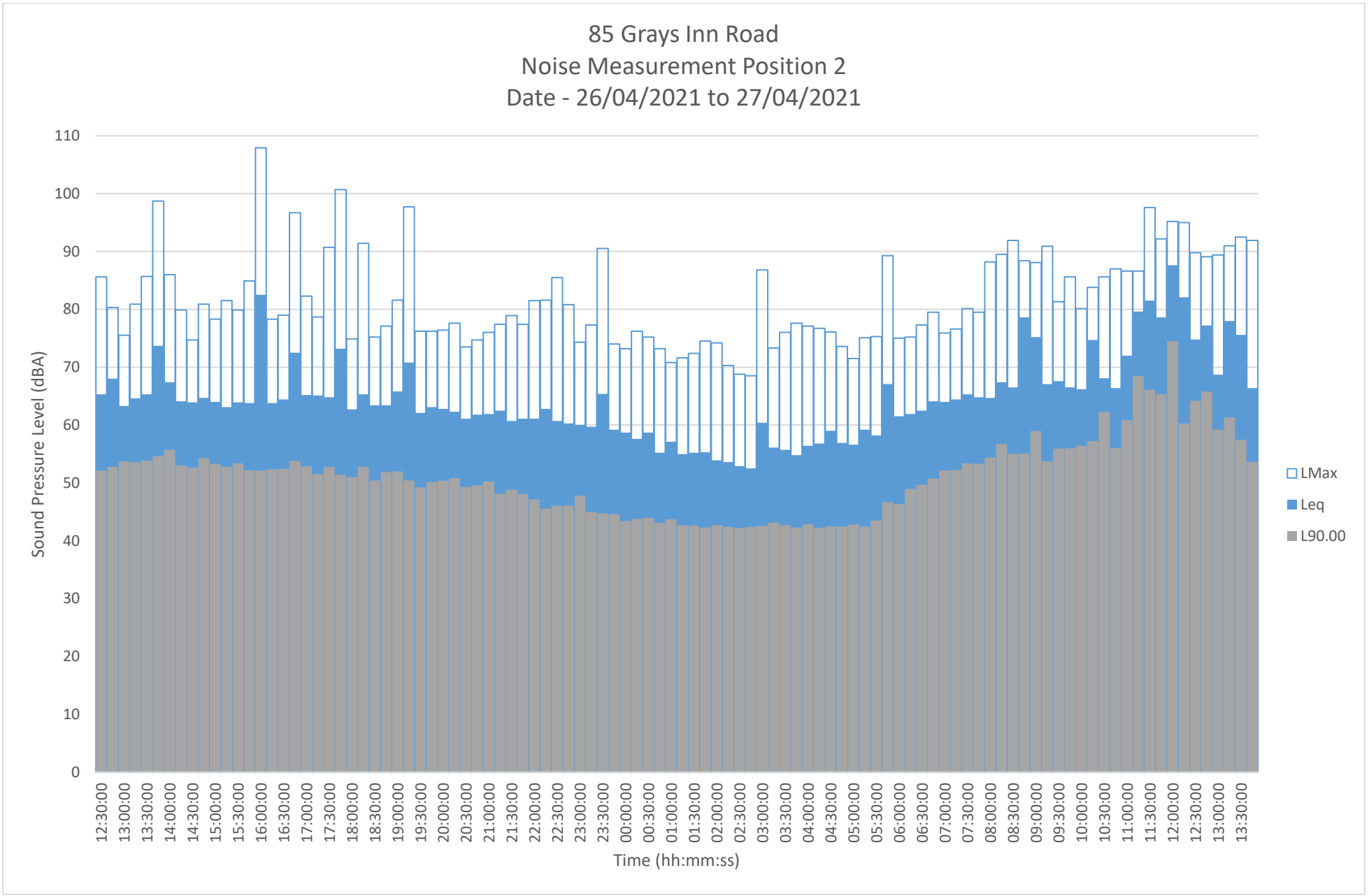
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PROJECT ANATOMY

AIR QUALITY ASSESSMENT

VC-103575-AQ-RP-0001
R00

AUGUST 2021

VANGUARDIA

DOCUMENT CONTROL			
DOCUMENT TITLE	AIR QUALITY ASSESSMENT	**REVISION**	0
DOCUMENT NUMBER	VC-103575-AQ-RP-0001	**ISSUE DATE**	AUGUST 2021
PROJECT NUMBER	103575	**AUTHOR**	CW
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VANGUARDIA LIMITED

HEAD OFFICE
21 Station Road West, Oxted
Surrey RH8 9EE

Tel +44 (0) 1883 718690
Fax +44 (0) 8700 516196

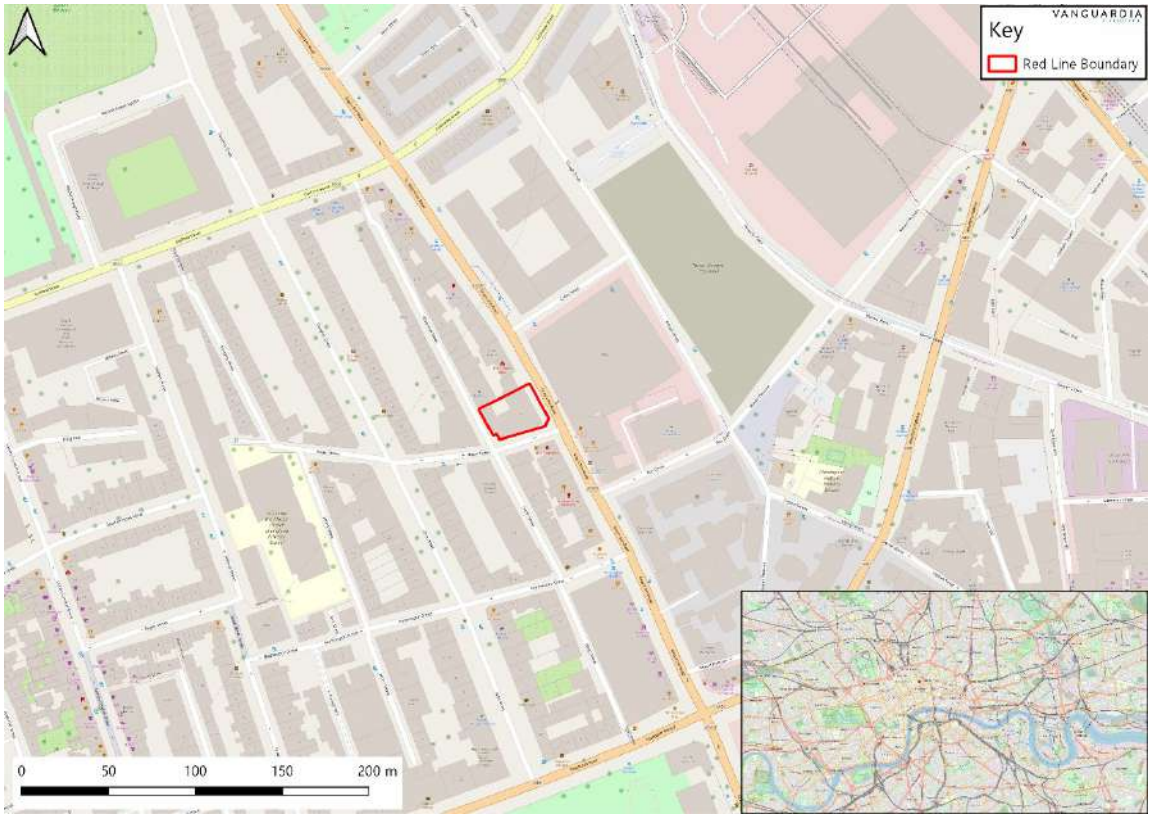
office@vanguardia.co.uk
vanguardia.co.uk

CONTENTS

1. INTRODUCTION

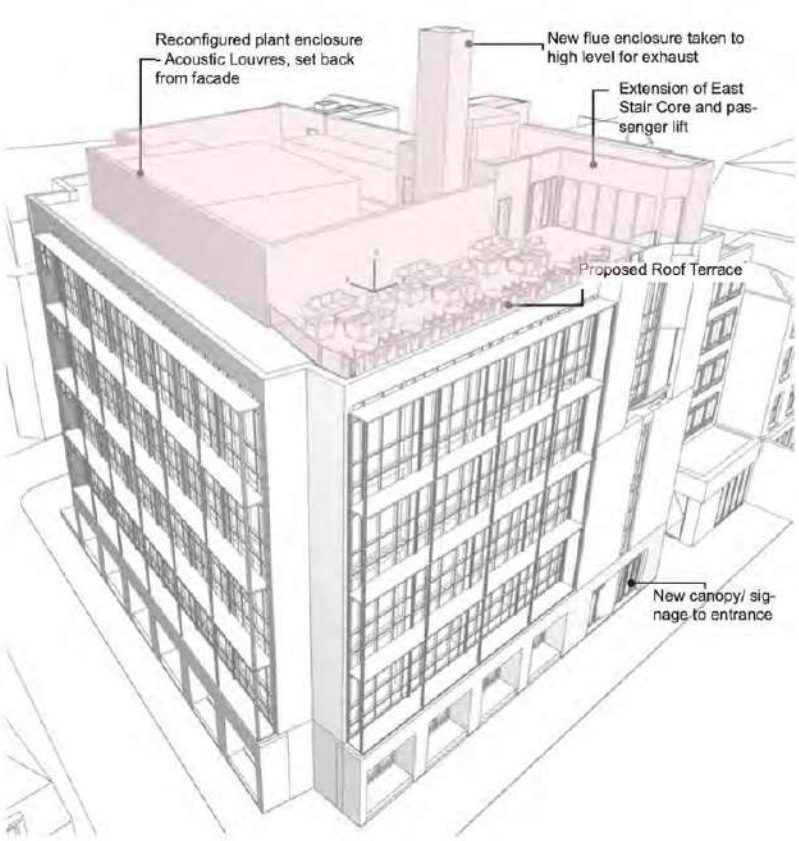
1.1. Vanguardia has been commissioned by Gray's Property Holdings Ltd to undertake an air quality assessment, (AQA), to accompany a planning application at 85 Gray's Inn Road, London. The National Grid Reference for the centre of the site is TQ 30876 82145. The location of the application site is shown in Figure 1.

Figure 1 Site Location



1.2. The proposals are for *the alterations and extension of building to rear at ground to level 4, installation of fume extract and mechanical plant, front entrance canopy and associated alterations and infrastructure work*. Part of the alterations will be the creation of up to six fume cupboards which will be ducted to the proposed stack. The fumes from these laboratories will dispersed through a new 9 m flue on the roof of the building, as illustrated in Figure 2.

Figure 2 Proposed Site Layout



3D Concept from Model

1.3. At the time of writing, it is not known what chemicals will be utilised within the fume cupboards. However, Vanguardia have been advised to assume methanol as the example chemical. This has therefore been utilised within this assessment.

1.4. In addition to the proposed fume cupboards the client has advised there is the potential for a backup diesel generator. At the time of writing as an end user for the scheme is not known, it is unknown if this will be required. However, for completeness an assessment been undertaken to consider the potential impacts.

1.5. This assessment has been undertaken to assess the significance of the impacts from the operational phase of the development associated with the fume cupboards, ducted flue and diesel backup generator on human health receptors.

1.6. A dust risk assessment has also been included within the assessment, due to the risk of dust generation from the demolition and construction phase.

1.7. To note, as the development is considered car free, therefore, an assessment on the impact of emissions on existing receptors as a result of vehicles has been scoped out of this assessment.

1.8. An Air Quality Neutral (AQN) Assessment has not carried out as it is not clear what the final arrangements of the proposed developments will be. Once this has been established, with final specifications on heating arrangement and the identification of an end client, an AQN Assessment can be conducted.

2. LEGISLATION, POLICY & GUIDANCE CONTEXT

EUROPEAN LEGISLATION

2.1. The following text is taken from the leglislation.gov.uk website[1] and sets out how EU Legislation will be retained in the United Kingdom after the Brexit transition:

"The UK is no longer a member of the European Union. EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation, under the control of the UK's Parliaments and Assemblies, and is published on legislation.gov.uk.

EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in sections 2 and 3 of the European Union (Withdrawal) Act 2018 (c. 16)."

2.2. Air pollutants at high concentrations can give rise to adverse effects upon the health of both humans and ecosystems. The European Union (EU) legislation on air quality forms the basis for the national UK legislation and policy.

2.3. The EU Framework Directive 2008/50/EC came into force in May 2008 and sets out legally binding limits for concentrations of the major air pollutants that can impact on public health. This Directive came into force in England in June 2010. Amendments to this Directive was made following amendments to the 2008/50/EC and 1004/107/EC on air quality made by Directive 2015/1480/EC. The updated Directive, The Air Quality Standards (Amendment) Regulations 2016, came into force on 31st December 2016[2].

NATIONAL LEGISLATION

2.4. Part IV of the Environment Act 1995[3] requires local authorities to review and assess the air quality within their boundaries. As a result, the Air Quality Strategy was adopted in 1997, with national health-based standards and objectives set out for the, then, eight key air

[1] EU legislation and UK law. Accessible at: https://www.legislation.gov.uk/eu-legislation-and-uk-law
[2] Statutory Instrument, 2016. The Air Quality Standards Regulations', No. 1184. Queen's Printer of Acts of Parliament.
[3] Department for Environment, Food and Rural Affairs (1995) The Environment Act. HMSO, London.

pollutants including benzene, 1-3 butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulphur dioxide.

2.5. The purpose of the Air Quality Strategy was to identify areas where air quality was unlikely to meet the objectives prescribed in the regulations. The strategy was reviewed in 2000 and the amended Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2000) was published. This was followed by an Addendum in February 2003 and in July 2007, when an updated Air Quality Strategy was published.

2.6. The pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence regarding how each pollutant affects human health. Pollutant objectives are the future dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility.

2.7. The pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence regarding how each pollutant affects human health. Pollutant objectives are the future dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility. The Air Quality Standards Regulations (2016)[4] impose duties on the Secretary of State relating to achieving of the limit values set out within the regulations.

RELEVANT AIR QUALITY STANDARDS AND ENVIRONMENTAL ASSESSMENT LEVELS

2.8. A summary of the relevant Air Quality Objectives (AQO) and Environment Assessment Levels (EAL)[5] for human health and environmental receptors relevant to this assessment are presented in Table 1.

Table 1 Air Quality Standards

Pollutant	Average Period	Objective	Percentile Equivalent
Methanol (CH_3OH)	Annual Mean	2,660 µg/m^3	-
	1-hour Mean	33,300 µg/m^3	-
Nitrogen Dioxide (NO_2)	Annual Mean	40 µg/m^3	-
	1-hour Mean	200 µg/m^3 not to be exceeded more than 18 times a year	99.79

[4]The Air Quality Standards Regulations (Amendments), 2016.
[5] Air emissions risk assessment for your environmental permit - https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit (accessed 21/07/2021)

Particles (PM_{10})	Annual Mean	40 µg/m^3	-
	24-hour Mean	50 µg/m^3 not to be exceeded more than 18 times a year	90.41
Particles ($PM_{2.5}$)	Annual Mean	25 µg/m^3	-

STATORY NUISANCE

2.9. Under Part III of the Environmental Protection Act (1990)[6], it is the duty of the local authorities to take steps as reasonably practical to investigate issues that could be a 'statutory nuisance', which include complains of:

> *a) "any premises in such a state as to be prejudicial to health or a nuisance;*
>
> *b) smoke emitted from premises so as to be prejudicial to health or a nuisance;*
>
> *c) fumes or gases emitted from premises so as to be prejudicial to health or a nuisance*
>
> *d) any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance;*
>
> *e) any accumulation or deposit which is prejudicial to health or a nuisance;*
>
> *[…]"*

2.10. The local authority must serve an abatement notice on the person, premises owner or occupier if one of the statutory nuisances above occur and is unreasonably interfering with the use or enjoyment of someone's premises and/or is prejudicial to health. Should the abatement notice not be complied with, penalties such as a fine or prosecution. However, it is considered as a defence if the best practicable means to stop or reduce a nuisance are employed.

2.11. Dust is the generic term used in the British Standard document BS 6069 (Part Two)[7], to describe particulate matter in the size range 1–75µm (micrometres) in diameter. This document has been withdrawn and has been replaced with the BS ISO 4225:2020[8] document. Dust nuisance is the result of the perception of the soiling of surfaces by excessive rates of dust deposition.

[6] UK Public General Acts, 1990. *Environmental Protection Act 1990, Chapter 43. Queen's Printer of Acts of Parliament.*
[7] The British Standards Institution, 1994. *BS6069-2:1994 - Characterization of air quality.*
[8] The British Standards Institution, 2020. *BS ISO 4225:2020 - Air quality.*

PLANNING POLICY

NATIONAL POLICIES

2.12. The National Planning Policy Framework (NPPF) (2021)[9] sets out the planning policy for England, to help achieve sustainable development within the planning sector.

2.13. Paragraph 105 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport."

2.14. Paragraph 174 states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

[..]

e) 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.

[..]"

2.15. Paragraph 185 states:

"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."

[9] Department of Communities and Local Government (2021). National Planning Policy Framework 2. HMSO, London.

2.16. Paragraph 186 states:

> *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

2.17. Paragraph 188 states:

> *"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."*

2.18. The NPPF also sets out the national planning policy on biodiversity and conservation. This emphasises that the planning system should seek to minimise effects on and provide net gains in biodiversity, wherever possible, as part of the Government's commitment to halting decline and establishing coherent and resilient ecological networks.

2.19. The NPPF is supported by Planning Practice Guidance (PPG)[10] (DCLG, 2021), which includes guiding principles on how planning can take account of the impacts of new development on air quality.

2.20. Paragraph 001 Reference ID: 32-001-20191101 states:

> *"The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that affect public health such as particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2).*

10 National Planning Practice Guidance web-based resource. Accessible at https://www.gov.uk/government/collections/planning-practice-guidance

The UK also has national emission reduction commitments for overall UK emissions of 5 damaging air pollutants:

- *fine particulate matter ($PM_{2.5}$)*
- *ammonia (NH_3)*
- *nitrogen oxides (NO_x)*
- *sulphur dioxide (SO_2)*
- *non-methane volatile organic compounds (NMVOCs)*

As well as having direct effects on public health, habitats and biodiversity, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. Odour and dust can also be a planning concern, for example, because of the effect on local amenity."

2.21. Paragraph: 005 Reference ID: 32-005-20191101 states:

"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.

Where air quality is a relevant consideration the local planning authority may need to establish:

- *The 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- *whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- *whether occupiers or users of the development could experience poor living conditions or health due to poor air quality"*

REGIONAL POLICY

New London Plan

2.22. The London Plan[11] is the third London Plan and was published in March 2021. It is a new plan and brings together the geographical and locational aspects of the Mayors other strategies, which includes the environment. The plan provides an appropriate spatial strategy that plans for London's growth in a sustainable way.

2.23. The new London Plan includes one policy that is specifically related to air quality.

2.24. Policy SI 1 Improving air quality, states:

> *"A. Development Plans, through relevant strategic, site-specific and area based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.*
>
> *B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:*
>
> *1. Development proposals should not:*
>
> *a) lead to further deterioration of existing poor air quality*
>
> *b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits*
>
> *c) create unacceptable risk of high levels of exposure to poor air quality.*
>
> *2. In order to meet the requirements in Part 1, as a minimum:*
>
> *a) Development proposals must be at least air quality neutral*
>
> *b) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retrofitted mitigation measures*

[11] Greater London Authority, 2021, *The London Plan 2021.*

c) Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1

d) Development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people, should demonstrate that design measures have been used to minimise exposure.

C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:

1) How proposals have considered ways to maximise benefits to local air quality, and

2) What measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.

D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development."

2.25. The new London Plan also has several other policies which make reference to air quality. The relevant aspects of these polices can be found in the London Plan document, and include areas such as parking, energy infrastructure and many more.

LOCAL POLICY

Camden Local Plan

2.26. The Camden Local Plan[12] was adopted in 2017 and has a number of policies which are relevant to this assessment.

2.27. *Policy A1 Managing the Impact of Development states:*

"The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

[..]

d. require mitigation measures where necessary.

[..]"

2.28. Policy CC4 *Air Quality* states:

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

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

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

[12] London Borough of Camden, 2017 *Camden Local Plan 2016 – 2031*

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

Camden Planning Guidance – Air Quality

2.29. LBC has also published their own planning guidance[13]. This provides information on air quality in the borough and supports Local Plan Policy CC4 Air Quality.

STRATEGY

Mayor of London Air Quality Strategy

2.30. The Mayor of London Air Quality Strategy[14] was published in December 2010 and aims to reduce air pollution in London so that the health of Londoners is improved. In order to achieve this the EU air quality limits values need to be achieved as soon as possible. This will be achieved through a number of measures, some of which include the Congestion charging and London Low Emission Zone (LEZ), development of electric vehicle infrastructure, funding and supporting car clubs. Additional measures are outlined in the document.

Mayor of London Environmental Strategy

2.31. The Mayor of London Environment Strategy[15] , published in May 2018, integrates every aspect of London's environment into different categorised areas, including air quality. The document includes several transport and non-transport related policy measures outlined in Chapter 4, highlighting the need for improvement in London's air quality and ensuring London is greener, cleaner and ready for the future. The Mayors main aim is to create a zero emission London by 2050, and aims to do this my outlining a number of proposals.

2.32. Policy 4.2.1 states:

"Reduce emissions from London's road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport."

[13] London Borough of Camden, 2021. *Camden Planning Guidance Air Quality.*
[14] Greater London Authority, 2010. *The Mayor's Air Quality Strategy.*
[15] Greater London Authority, 2018. *London Environment Strategy.*

2.33. Policy 4.2.2 states:

"Reduce emissions from non-road transport sources, including by phasing out fossil fuels."

2.34. Proposals for this policies promoting more sustainable forms of travel in London as well as proposing a reduction in emission from Non-Road Mobile Machinery (NRMM), construction and demolition sites, homes and workplaces and large-scale generators.

2.35. Policy 4.3.1 states:

"The Mayor will establish new targets for PM2.5 and other pollutants where needed. The Mayor will seek to meet these targets as soon as possible, working with government and other partners."

2.36. Policy 4.3.2 states:

"The Mayor will encourage the take up of ultra low and zero emission technologies to make sure London's entire transport system is zero emission by 2050 to further reduce levels of pollution and achieve WHO air quality guidelines."

2.37. Policy 4.3.3 states:

"Phase out the use of fossil fuels to heat, cool and maintain London's buildings, homes and urban spaces, and reduce the impact of building emissions on air quality."

2.38. Policy 4.3.4 states:

"Work to reduce exposure to indoor air pollutants in the home, schools, workplace and other enclosed spaces."

2.39. As well as aiming to meet the WHO guidelines by 2030, the proposals for these policies include the switching of fleet vehicles to zero emission capability, implementation of local zero emission zones from 2020, ensure all new large-scale developments are 'Air Quality Positive' and maintain Air Quality Neutral requirements for all developments. Furthermore, the reduction in emissions from wood and other solid fuel burning, using the planning system to reduce indoor exposure though design measures, preventing poor air quality entering the building are all proposed.

OTHER RELEVENT GUIDANCE

Greater London Authority - Sustainable Design and Construction Supplementary Planning Guidance

2.40. The Greater London Authority (GLA) released the "Sustainable Design and Construction" Supplementary Planning Guidance (SPG) document[16] in April 2014. The SPG aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development. It provides guidance on to how to achieve the London Plan objectives effectively, supporting the Mayor's aims for growth, including the delivery of housing and infrastructure.

2.41. In relation to air quality the SPG provides guidance on the following key areas:

- Assessment requirements;
- Construction and demolition;
- Design and occupation; and
- Emissions standards for combustion plant

2.42. As well as setting out how to minimise emissions, the document sets out 'Air Quality Neutral' should be implemented as per Policy SI 1 of the London Plan.

Greater London Authority - The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance

2.43. The Greater London Authority (GLA) released the *"Control of Dust and Emissions during Construction and Demolition"* SPG document[17]in July 2014. The guidance seeks to reduce emissions of dust and PM_{10} from construction and demolition activities in London. It also aims to manage emissions of nitrogen oxides (NO_x) from construction and demolition machinery. The SPG document:

- Provides more detailed guidance on the implementation of all relevant policies in the London Plan and the Mayor's Air Quality Strategy to neighbourhoods, boroughs, developers, architects, consultants and any other parties involved in any aspect of the demolition and construction process;
- Sets out the methodology for assessing the air quality impacts of construction and demolition in London; and

[16]Greater London Authority, 2014. Sustainable Design and Construction Supplementary Planning Guidance.
[17] Greater London Authority, 2014. The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance.

- Identifies good practice for mitigating and managing air quality impacts that is relevant and achievable, with the overarching aim of protecting public health and the environment.

2.44. The principles of the SPG apply to all developments in London as their associated construction and demolition activity may all contribute to poor air quality unless properly managed and mitigated.

3. ASSESSMENT APPROACH

INTRODUCTION

3.1. This section sets out the approach taken to assess the potential impact on air quality during the construction and operational phases of the proposed development.

CONSTRUCTION ASSESSMENT APPROACH

3.2. During the construction phase, activities may lead to the generation of particulate matter (dust), as well as gaseous emissions from construction vehicles and stationary plant. These emissions could give rise to complaints regarding potential impacts upon human / ecological health.

3.3. There is currently no formal assessment criterion for dust. Therefore, the approach developed by the Institute of Air Quality Management (2016)[18], has been utilised as part of this assessment. This document is the basis for the Mayor of London (2014) document. The assessment consists of a five step processes to assess the potential level of risks, (Large, Medium, Small or Negligible), regarding the four main phases of development, (demolition, earthworks, construction, and trackout). The assessment includes consideration of pre-mitigation, and post-mitigation impacts, based upon the scale and nature of the development.

3.4. The approach states that an assessment will normally be required where there are:

- residential dwellings within 350 m of the site boundary and/or within 50 m of the routes used by construction vehicles on the local highway network and up to 500m from site entrances; and/or
- Ecological site 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).

3.5. An ecological site refers to any sensitive habitat that is susceptible to dust soiling. For locations with a statutory designation, such as Ramsar Sites, Sites of Specific Scientific Interest (SSSI), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), consideration should be given as to whether the particular site is sensitive to dust. Some

[18] Institute of Air Quality Management 2016 Guidance on the Assessment of Dust from Demolition and Construction.

non-statutory sites (such local nature reserves) may also have to be considered if appropriate.

3.6. The degree of risk is then derived by combining the level of the risk, and the sensitivity of the area. To note, not all the criteria for a particular risk class need to be met for magnitude or significance. It is suggested in IAQM (2016) guidance that other criteria, (such as professional judgement) can be used to justify the assessment.

3.7. The full Construction Dust Impact Assessment methodology is set out in Appendix A and the assessment is summarised in Section 5.

OPERATIONAL IMPACT ASSESSMENT APPROACH

SCOPE OF ASSESSMENT

3.8. The assessment is based on the following scope of work:

- **Spatial -** The assessment considers the impact of emissions from the site (from the operation's stack) and diesel generator on local air quality; and
- **Temporal -** The operational phase impacts resulting from the proposed development have been considered for the earliest possible year of operation (2022).

SCREENING CRITERIA

Point Source Emissions

3.9. The Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) (2017) Land-Use Planning and Development Control: Planning for Air Quality document[19] has a screening criteria for point source assessments, which determines if the impacts of emissions from point source are significant or not.

3.10. The first stage of the guidance is to determine whether a point source assessment is required based on the emissions. This is illustrated in Table 6.2 of the guidance, and states:

[19] Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM), 2017. *Land-use Planning & Development Control: Planning for Air Quality.*

"Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable."

3.11. Should the point source not meet any of the conditions above, an assessment on the impacts are required.

3.12. Both the EPUK & IAQM and the EA risk assessment guidance[20] provides criteria for assessing the significance of emissions with respect to the background air quality and air quality standards.

Criteria for screening out insignificant Process Contributions (PCs)

3.13. PCs can be screened out from detailed dispersion modelling if both of the below criteria are met:

- PC long-term < 0.5% of the long-term air quality standard; and
- PC short-term < 10% of the short-term air quality standard.

3.14. If both of these criteria are met, no further assessment of the pollutant in question is required as the impacts are considered negligible and 'not significant'. If the criteria is not met, then a detailed assessment of the Predicted Environmental Concentrations are required.

3.15. Detailed modelling is also required if:

- Emissions affect an AQMA; or
- Restrictions apply for any substance emitted in this area.

[20] https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

3.16. The results of the detailed modelling are assessed for the resulting PECs against the relevant AQO. Significance criteria are used to inform the assessment and are discussed in paragraph 3.47.

SENSITIVE RECEPTORS

3.17. This assessment includes the nearest on-site receptors to the stacks were identified using aerial photography mapping. Table 2 presents the receptors specified for assessment, and Figure 3 illustrates these receptor locations.

Table 2 Specified Receptors

Receptor ID	X (m)	Y (m)	Z (m)
R1	530888	182141	20.2
R2	530887	182144	20.2
R3	530885	182149	20.2
R4	530885	182153	20.2

Figure 3 Specified Receptors

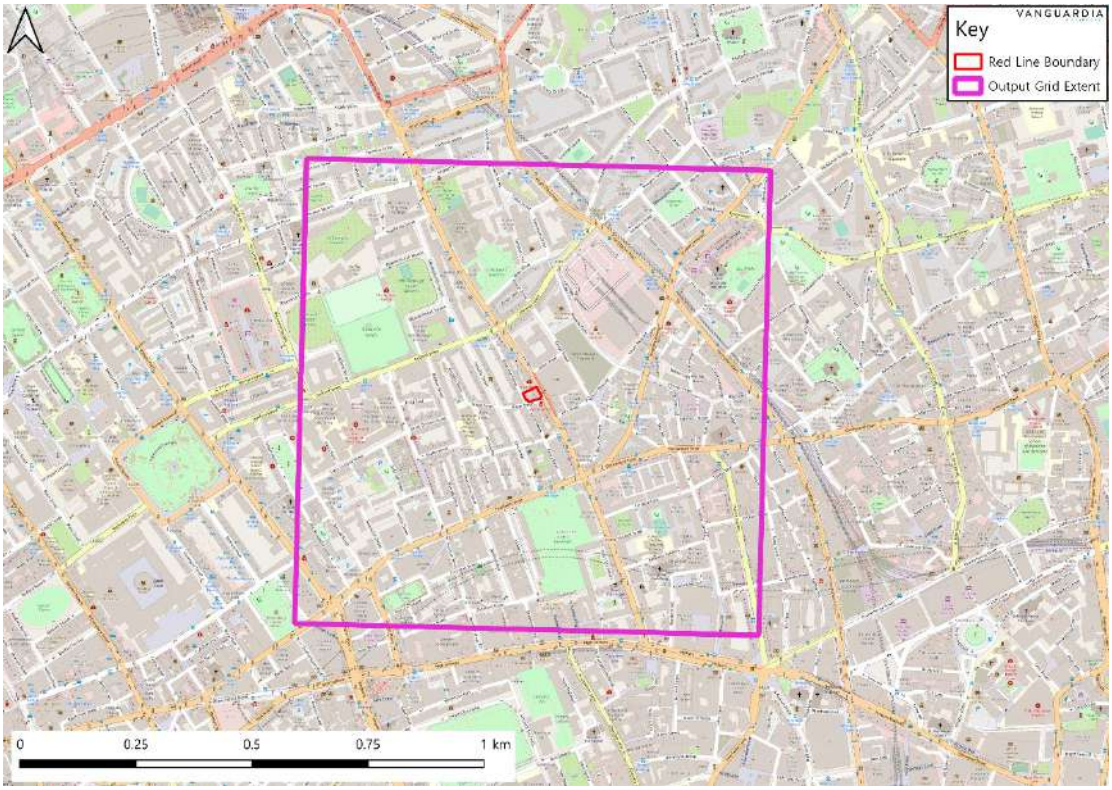
MODELLED GRID EXTENT

3.18. A grid area was defined based upon the source location, anticipated pollutant dispersion patterns and the positioning of sensitive receptors. The modelled grid parameters are defined in Table 3 below and illustrated in Figure 4.

Table 3 Modelled Grid Parameters

Parameter	Min	Max
X (m)	530378	531378
Y (m)	181640	182640
Z (m)	1.5	

Figure 4 Specified Receptors



ASSESSMENT SCENARIOS

3.19. The following scenarios have been assessed:

- 2022 Baseline; and
- 2022 Baseline + Proposed Development

DISPERSION MODEL

3.20. Dispersion modelling was undertaken using ADMS-5.2 (v5.2.2.0), which is developed by Cambridge Environmental Research Consultants (CERC) Ltd. ADMS-5 is a PC based dispersion modelling software package that simulates a wide range of buoyant and passive releases to atmosphere from either single or multiple sources. The model utilises hourly meteorological data to define conditions for plume rise, transport and diffusion. It estimates the concentration for each source and receptor combination for each hour of input meteorology and calculates user-selected long-term and short-term averages. Building and source parameters have been taken from the architect's drawings and emissions parameters for the proposed development. The maximum predicted concentrations have been utilised for this assessment.

3.21. The model typically requires the following input data:

- Extend of the modelling area;
- Locations and dimensions of all sources and nearby structures;
- Output grid and receptor locations;
- Meteorological data;
- Terrain data (if modelling terrain effects);
- Emission rates, emission parameters (e.g. temperature) and emission profiles (e.g. one hour per day) for modelled pollutants; and
- Surface roughness and Monin-Obukhov length.

SITE LAYOUT (BUILDING AND STRUCTURAL EFFECTS)

3.22. The dispersion of substances released from elevated sources can be influenced by the presence of buildings close to the emission point. Structures that are in excess of one third of the height of the stack can have a significant effect on dispersion by interrupting wind flows and causing significantly higher ground-level concentrations close to the source than would arise.

3.23. The buildings included in the dispersion model are illustrated below in Figure 5.

Figure 5 Modelled Buildings

EMISSION PARAMETERS

Diesel Generator

3.24. The diesel generator parameters included in the model are summarised in Table 4, based upon the information provided by the client. The potential specification of the diesel generator if required in the future is set out in Appendix C, which also sets out the emission rates. For the modelling process it has been assumed that the diesel generator would operate for up to three hours on a weekday morning each month.

3.25. The exact location of any future flue is not known yet. Therefore, an indicative location has been used, with the 'Tenant Plant Space' as set out in drawing ref KJT-ZZ-05-DR-ME-7001 - *Fifth Floor Plant Layout & Primary Service Distribution Routes*.

3.26. As a worst-case, an assumption has been made that the generators will run at a 100% load.

Table 4 Stack Parameters

Parameter (unit)	Flue
Stack Location	E: 530884 N: 182142
Internal Stack Diameter (m)	0.2

Stack Height (m)	23.7
Temperature of release (°C)	537
Volume flux (m^3/min)	40.4

Fume Cupboard Flue

3.27. Emissions from the proposed fume cupboards have been included in the modelling. Six fume cupboards are anticipated to be used, with the ducting for these fume cupboards proposed to exhaust via one flue.

3.28. The client has advised that solvents are expected to be in common use in the fume cupboards in all laboratories on a daily basis. There will be regular emissions at low levels, and accidental spillages can be expected to occur occasionally.

3.29. Common solvents include ethanol, n-heptane and methanol. The assessment has assumed a continuous emission of methanol, expected to be one of the most commonly used solvents in the fume cupboards and the one which has the most stringent workplace exposure limits (WELs), as outlined by the Environment Agency.

3.30. Two modelling scenarios have been considered as follows (based upon a similar scheme as being proposed here):

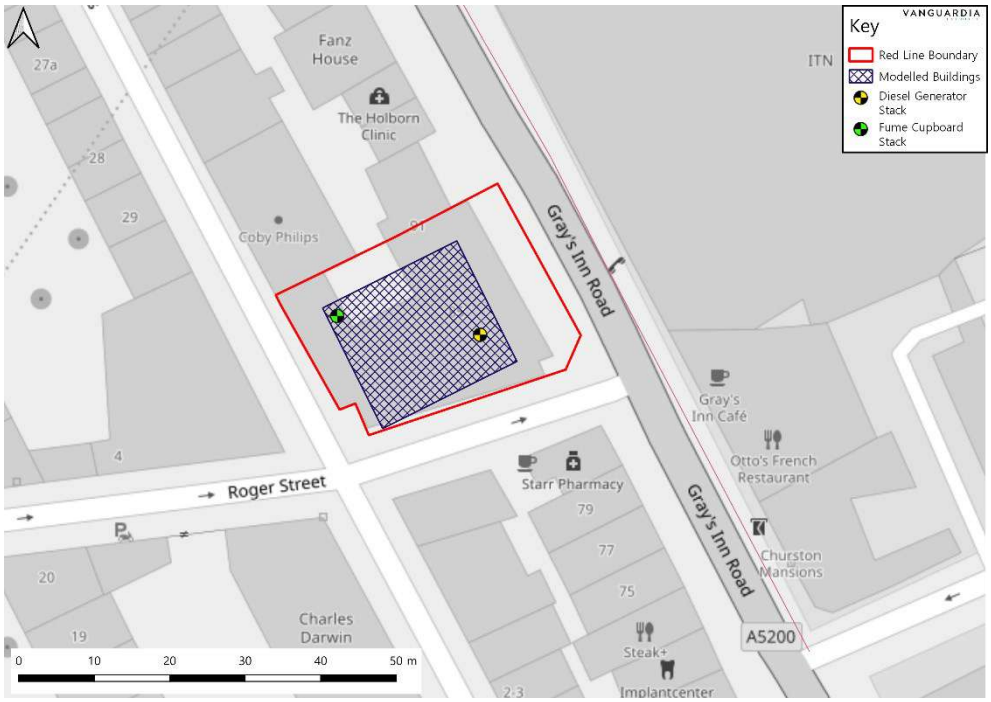
- A typical event, in which 5 litres of solvent is used within each fume cupboard per day (It is understood up to 6 fume cupboards will be provided). Of this 10% is assumed to evaporate and be discharged by the chemical flues. This gives a daily discharge from each fume cupboard of 500ml (liquid), calculated to be 0.02748g/s of methanol; and
- A spillage event, in which 2.5 litres of solvent is spilt in one location in the building and discharged during a 30 second period, which has been calculated to be 66g/s of methanol. It is expected that this would be a rare event and is likely to occur on less than annual basis. As a worst-case assessment, emissions of methanol at a rate of 66g/s have been assumed to persist for an hour-long period.

3.31. The Flue source parameters included in the model are summarised in Table 5 and illustrated in Figure 6.

Table 5 Flue Parameters

Parameter (unit)	Stack
Stack Location	E: 530865 N: 182144
Internal Stack Diameter (m)	0.9
Stack Height (m)	27.7
Temperature of release (°C)	21
Velocity (m/s)	6

Figure 6 Modelled Sources



NO_X TO NO_2 ASSUMPTIONS FOR ANNUAL-MEAN CALCULATIONS

3.32. Historically, the Environment Agency has recommended that for a 'worse case scenario', a 70% conversion of NO_x to NO_2 should be considered for calculation of annual average concentrations. If a breach of the annual average NO_2 objective/limit value occurs, the Environment Agency requires a more detailed assessment to be carried out with operators asked to justify the use of percentages lower than 70%.

3.33. Following the withdrawal of the Environment Agency's H1 guidance document, there is no longer an explicit recommendation; however, for the purposed of this assessment a 70% conversion of NO to NO_2 has been assumed for annual average NO_2 concentrations in line with the Environment Agency's historic recommendations.

3.34. Emissions of NO_x will comprise contributions from both NO and NO_2. Typically, air quality assessments are made against the concentrations of NO_2 as it is more toxic than NO. However, combustion flue gases comprise 90-95% NO which, in time, will oxidise in the atmosphere into NO_2.

NO_X TO NO_2 ASSUMPTIONS FOR HOURLY-MEAN CALCULATIONS

3.35. An assumed conversion of 35% follows the Environment Agency's recommendations for the calculation of 'worst case scenario' short-term NO_2 concentrations.

METEOROLOGICAL DATA

3.36. The key meteorological parameters for dispersion modelling are wind speed and wind direction. Meteorological parameters such as cloud cover, surface temperature, precipitation rate and relative humidity are also considered.

3.37. For dispersion modelling, hourly-resolved data are required and often it is difficult to find a local site that can provide reliable data for all the meteorological parameters at this resolution.

3.38. Based upon the above, a suitably representative meteorological monitoring station identified is Heathrow Airport meteorological station, which is located approximately 22 km southwest of the subject site.

3.39. To account for variation in meteorological conditions, the qualitative assessment and dispersion modelling have been carried out with the latest available meteorological data from the period 2015 to 2019. The windroses for these are set out in Appendix D.

TOPOGRAPHY

3.40. The presence of elevated terrain can significantly affect ground level concentrations of pollutants emitted from elevated sources, such as stacks, by reducing the distance between the plume centre line and ground level, increasing turbulence and, hence, plume mixing.

3.41. Guidance for the use of the ADMS-5 model suggests that terrain is normally incorporated within a modelling study when the gradient exceeds 1:10. Terrain is not included in the model.

SURFACE ROUGHNESS

3.42. The dispersion meteorological site and assessment area surface roughness length (z0) was set to 1 m (Cities).

MINIMUM MONIN-OBUKHOV LENGTH

3.43. The Minimum Monin-Obukhov Length (MMOL) provides a measure of the stability of the atmosphere. An MMOL value of 100 m (large conurbations > 1 million) was used in the dispersion model to describe the modelling and meteorological site areas. These values are considered representative of the respective surrounding areas.

IMPACT / SIGNIFICANCE CRITERIA

3.44. Currently there is no formal guidance on the absolute magnitude and significance criteria for the assessment of air quality impacts. However, the EPUK & IAQM (2017) document have published recommendations for describing the impact at individual receptor locations as set out in Table 6 and utilised to determine the description of any impact.

3.45. To note, the approach is that any change in concentration smaller than 0.5% of the long-term environmental standard will be negligible, regardless of the existing air quality conditions. Any change smaller than 1.5% of the long-term environmental standard will be negligible so long as the total concentration is less than 94% of the standard and any change smaller than 5.5% of the long-term environmental standard will be negligible so long as the total concentration is less than 75% of the standard. The guidance also explains that:

"Where peak short term concentrations (those averaged over periods of an hour or less) from an elevated source are in the range 11-20% of the relevant Air Quality Assessment Level (AQAL), then their magnitude can be described as small, those in the range 21-50% medium and those above 51% as large. These are the maximum concentrations experienced in any year and the severity of this impact can be described as slight, moderate and substantial respectively, without the need to reference background or baseline concentrations. In most cases, the assessment of impact severity for a proposed development will be governed by the long-term exposure experienced by receptors and it will not be a necessity to define the significance of effects by reference to short-term impacts. The severity of the impact will be substantial when there is a risk that the relevant AQAL for short-term concentrations is

approached through the presence of the new source, taking into account the contribution of other local sources".

3.46. The IAQM & EPUK (2017) document provides a framework as set out in Table 6, on the severity of an impact as a descriptor. Although the impacts might be considered 'Slight', 'Moderate' or 'Substantial' at one or more receptor location, the overall effects of a proposed development may not always be judged as being significant.

Table 6 Air Quality Impact Descriptors for Individual Receptors

Long term average Concentration at receptor in assessment year.	**% Change in concentration relative to Air Quality Action Level (AQAL*)**				
	0	**1**	**2-5**	**6-10**	**>10**
75% of less of AQAL	Negligible	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Negligible	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Negligible	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Negligible	Moderate	Substantial	Substantial	Substantial

*AQAL Air Quality Assessment Level, which may be an air quality objective, EU limit or target value, or an Environment Agency 'Environmental Assessment Level (EAL)'.

3.47. The judgement of the overall significance should be made by a competent professional who is suitably qualified.

MODELLING ASSUMPTIONS, UNCERTAINTIES AND EXCLUSIONS

3.48. In addition to the parameters outlined above, some assumptions have been made for the modelling, including:

- The diesel generator will operate for three hours on a weekday morning each month; and
- Emission data and source parameters has been obtained from the client's data sheets and experience from working on similar schemes.

3.49. Uncertainty in dispersion modelling predictions can be associated with a variety of factors, including:

- Model limitations;
- Data uncertainty due to errors in input data, emission estimates, operational procedures, land use characteristics and meteorology; and
- Variability - randomness of measurements used.

3.50. Potential uncertainties in the model results were minimised as far as practicable and worst-case inputs used in order to provide a robust assessment. This included the following:

- Choice of model - ADMS-5 is a widely used atmospheric dispersion model and results have been verified through a number of studies to ensure predictions are as accurate as possible;
- Emission rates - Emission rates were calculated based upon data provided by the client. As such, they are considered to be representative of potential releases during normal operation;
- Receptor locations - A Cartesian Grid was included in the model in order to provide suitable data for contour plotting as well as specified receptors;
- Variability - Where site specific input parameters were not available, assumptions were made with consideration of the worst-case conditions as necessary in order to ensure a robust assessment of potential pollutant concentrations; and
- All results presented are the maximum concentrations from a 5-year modelling period, so represent the worst case.

3.51. The analysis of the component uncertainties indicates that, overall, the predicted total concentration is likely to be towards the conservative end of the uncertainty range rather than being a central estimate. The actual concentrations that will be found when the development is operational are unlikely to be higher than those presented within this report and are more likely to be lower.

4. BASELINE CONDITIONS

AIR QUALITY REVIEW AND ASSESSMENT

4.1. Under the Air Quality Strategy there is a duty on all Local Authorities to consider the air quality within their boundaries and to report annually to Defra. Local air quality management in the vicinity of the site had been assessed through the national Review and Assessment process, in fulfilment of Part IV of the Environmental Act 1995.

4.2. The London Borough of Camden have declared an Air Quality Management Area (AQMA) covering the whole jurisdiction for exceedances of the NO_2 annual mean objective and PM_{10} 24-hour mean objective.

4.3. The GLA have identified 187 'Air Quality Focus Areas' where concentration of NO_2 exceed the annual mean objective and have high levels of human exposure. These areas are identified as requiring air quality improvements and is where the GLA believe the problems to be most acute. The proposed development is not located within any of these Focus Areas.

LOCAL AIR QUALITY MONITORING

4.4. The London Borough of Camden have four automatic pollution monitoring sites measuring a mixture of pollutants, including NO_2, PM_{10} and $PM_{2.5}$. To support this, the council also have a network of non-automatic nitrogen dioxide (NO_2) diffusion tubes.

4.5. Table(s) 7 to 9 set out the monitored concentrations for NO_2, PM_{10} and $PM_{2.5}$ respectively between 2016 and 2020.

Table 7 Summary of Nitrogen Dioxide (NO2) Monitoring (2016 – 2020)

Site ID	Site Type	Site Name	2016	2017	2018	2019	2020
Automatic Monitors – Annual Mean (µg/m³)							
BL0	UB	London Bloomsbury	**42**	38	36	32	28
CD1	K	Swiss Cottage	**66**	**53**	**54**	**43**	33
CD9	R	Euston Road	**88**	**83**	**82**	**70**	**43**
Objective			**40**				

Automatic Monitors – No. of Hours >200 µg/m³							
BL0	UB	London Bloomsbury	0	0	0	0	0
CD1	K	Swiss Cottage	**37**	1	2	1	0
CD9	R	Euston Road	**39**	**25**	18	7	0
Objective			**18**				

*__BOLD__ indicates exceedance of the objective

Table 8 Summary of Particulate Matter (PM_{10}) Monitoring (2016 – 2020)

Site ID	Site Type	Site Name	2016	2017	2018	2019	2020
Automatic Monitors – Annual Mean (µg/m³)							
BL0	UB	London Bloomsbury	20	19	17	18	16
CD1	K	Swiss Cottage	21	20	21	19	16
CD9	R	Euston Road	24	20	21	22	18
KGX	UB / I	Coopers Lane	-	-	15	15	13
Objective			**40**				
Automatic Monitors – No. of Days >50 µg/m³							
BL0	UB	London Bloomsbury	9	6	1	9	4
CD1	K	Swiss Cottage	7	8	4	8	3
CD9	R	Euston Road	10	3	2	8	2
KGX	UB / I	Coopers Lane	-	-	1	5	1
Objective			**35**				

Table 9 Summary of Particulate Matter ($PM_{2.5}$) Monitoring (2016 – 2020)

Site ID	Site Type	Site Name	2016	2017	2018	2019	2020
Automatic Monitors – Annual Mean (µg/m³)							
BL0	UB	London Bloomsbury	12	13	10	11	9
CD1	K	Swiss Cottage	15	16	11	11	10
CD9	R	Euston Road	17	17	14	15	14

Objective	25

4.6. A review of the measured nitrogen dioxide (NO_2) concentrations in Table 7 indicates at least one exceedances of the annual mean objective (40 µg/m^3) at each location for the past 5 years of monitoring and a number of exceedances of the hourly mean objective.

4.7. A review of the measured Particulate Matter (PM_{10}) concentrations in Table 8 indicates no exceedances of the of the annual mean objective (40 µg/m^3) or 24-hour mean objective.

4.8. A review of the measured Particulate Matter ($PM_{2.5}$) concentrations in Table 9 indicates no exceedances of the of the annual mean objective (25 µg/m^3).

BACKGROUND CONCENTRATIONS

4.9. The Defra website includes estimated background air pollution data for NO_x, NO_2, PM_{10} and $PM_{2.5}$ for each 1km by 1km OS grid square[21]. Background pollutant concentrations are modelled from the base year of 2018 and based on ambient monitoring, meteorological data from 2018 and then projected for future years. Projected pollutant concentrations for the year 2022, covering the closest OS grid squares to the assessment area, are provided in Table 3 and have been utilised as part within this assessment.

4.10. It should be noted that a recent statement from Defra states:

"Users of the updated LAQM tools should be aware that the projections in the 2018 reference year background maps and associated tools are based on assumptions which were current before the Covid-19 outbreak in the UK. In consequence these tools do not reflect short or longer term impacts on emissions in 2020 and beyond resulting from behavioural change during the national or local lockdowns."

NO_2

4.11. The maximum Defra background NO_2 annual mean concentrations for the modelled grid extent is 34.2 µg/m^3, comfortably below the relevant AQO. This is considered a reasonable baseline given the information published.

[21] Department for Environmental Food and Rural Affairs. Accessible at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

4.12. Background NO_2 concentrations have been calibrated against Automatic Urban and Rural Network (AURN) sites with more than 75% data capture. The methodology for this is set out in the Air Quality Consultants document[22].

PM_{10}

4.13. The maximum Defra background PM_{10} annual mean concentrations for the modelled grid extent is 19.3 µg/m^3, comfortably below the relevant AQO. This is considered a reasonable baseline given the information published.

$PM_{2.5}$

4.14. The maximum Defra background $PM_{2.5}$ annual mean concentrations for the modelled grid extent is 12.2 µg/m^3, comfortably below the relevant AQO. This is considered a reasonable baseline given the information published.

METHONAL

4.15. No Methanol background concentrations are available.

BACKGROUND CONCENTRATION SUMMARY

4.16. A summary of the annual mean background concentrations used for the purpose of this assessment are presented below in Table 10.

Table 10 Summary of DEFRA Background NO_2 PM_{10} and $PM_{2.5}$ Concentrations

Source	Site Type	Averaging Period	2022
NO_2 (µg/m^3)			
Defra	Background	Annual Mean	34.2
		1-Hour Mean	68.5
PM_{10} (µg/m^3)			
Defra	Background	Annual Mean	19.3

[22] Air Quality Consultants, 2020. Calibrating Defra's 2018- based Background NOx and NO2 Maps against 2019 Measurements.

		24-Hour Mean	38.6
$PM_{2.5}$ (µg/m³)			
Defra	Background	Annual Mean	12.2

5. CONSTRUCTION PHASE DUST IMPACT ASSESSMENT

5.1. The main air quality impacts associated with construction activities relate to the potential release of dust and particulate matter in both PM_{10} and $PM_{2.5}$ size fractions. There is also the potential for the evolution of other air quality pollutants. The sources of potential construction impact specifically associated with the proposed development are set out below:

- Potential for generation of airborne dusts from exposure and movement of soils and construction materials;
- Generation of fumes on-site by construction plant and tools throughout the construction phase;
- Increase in vehicle emissions (smoke/fumes) from vehicles (and potentially as a result of slow-moving traffic, should local congestion ensue); and
- Re-suspension of dust as a result of vehicle tyres travelling over dusty surfaces.

5.2. Although the proposals will see the existing building refurbished with the infill of the existing full-height atrium, a construction dust assessment has been undertaken in line with the IAQM (2016) and GLA guidance methodology as set out in Appendix A as the development proposes the construction of an additional four storeys above the courtyard, as well as the construction of a new terrace at roof level. A summary of the process is set out as follows.

SCREENING THE NEED FOR A FULL ASSESSMENT

5.3. Having reviewed the site location, it is evident that the site has a number of residential dwellings within 350 m of the Site boundary and therefore a detailed dust impact assessment is required.

5.4. A review of the Defra Magic website[23] indicates no statutory sites are located within the proximity of the site. Therefore, this has been scoped out of the dust assessment.

[23] Department for Environment, Food and Rural Affairs. MAGIC. Accessible at: http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx

POTENTIAL DUST EMISSION MAGNITUDE

DEMOLITION

5.5. A review of the site and the proposals indicates that the majority of site services are being removed, with more invasive items, such as lift works, rooftop plant enclosure and a number of WC's are being demolished. Based upon professional experience and IAQM (2016) criterion, it is considered that the demolition works will be 'Small.'

EARTHWORKS

5.6. The primary earthworks that will be taking place on site will be the creation of the four-storey extension above the court yard. As the total area of the developable site is less than 10,000 m^2. Based upon professional experience and IAQM (2016) criterion, it is considered that the earthworks will be 'Small.'

CONSTRUCTION

5.7. The primary construction that will be taking place on site will be the creation of the four storey extension above the court yard and the addition of a new roof terrace. The overall scale of the construction activities is therefore thought to be minimal. Based upon professional experience and IAQM (2016) criterion, it is considered that the construction works will be 'Small.'

TRACKOUT

5.8. The number of daily outward HGV vehicles movements which may track out dust and dirt is unknown, but it is anticipated to be less than 10 HGV movements. Based upon professional experience and IAQM (2016) criterion, it is considered that the trackout activities will be 'Small.'

5.9. Table 11 summarises the dust emission magnitude for the proposed development.

Table 11 Summary of Dust Emission Magnitude

Activity	Dust Emission Magnitude
Demolition	Small

Earthworks	Small
Construction	Small
Trackout	Small

SENSITIVITY OF THE AREA

5.10. Step 2B considers the number and the sensitivity of the areas. A consideration is also made for background PM_{10} concentrations when looking at human health impacts.

5.11. It should be noted that the following assessment is based on the development being occupied whilst the construction works take place.

SENSITIVITY OF THE AREA TO EFFECTS OF DUST SOILING

5.12. The presence of between 10 – 100 'High' sensitive residential receptors within approximately 20 m of the site boundary, indicates that the area around the site has a 'High' sensitivity, (Based upon Table A3 in Appendix A).

5.13. For trackout, there are between 10 - 100 'High' sensitive residential receptors within 20 m of where trackout may occur for a distance of up to 50m from the site entrance. This is considered to be of a 'High' sensitivity, (Based upon Table A3 in Appendix A).

SENSITIVITY OF THE AREA TO ANY HUMAN HEALTH EFFECTS

5.14. The presence of between 10 - 100 'High' sensitive residential receptors within 20 m of the site boundary, and the background PM_{10} concentrations detailed in Section 4, indicates that the area around the site has a 'Low' sensitivity, (Based upon Table A4 in Appendix A).

5.15. For trackout, there are between 10 – 100 'High' sensitive residential receptors within 20 m of where trackout may occur for a distance of up to 50 m from the site entrance. Along with the closest background PM_{10} concentrations detailed in Section 4, indicates that the area around the site has a 'Low' sensitivity, (Based upon Table A4 in Appendix A).

SENSITIVITY OF THE AREA TO ANY ECOLOGICAL EFFECTS

5.16. As discussed earlier in this Section the ecological sites element of the assessment has been scoped out.

RISK AND SIGNIFICANCE

5.17. The dust emission magnitude described in the sections above is combined with the sensitivity of the area as set out in the assessment matrix, (Table A6 of Appendix A). The resulting risk categories for the four construction activities, without mitigation, are set out in Table 12.

Table 12 Summary of Area Sensitivity

Activity	Sensitivity of the Area			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	Medium Risk	Low Risk	Low Risk	Low Risk
Human Health	Negligible	Negligible	Negligible	Negligible
Ecological	N/A	N/A	N/A	N/A

5.18. The IAQM (2016) does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place the IAQM (2016) guidance is clear that the residual effect will normally be 'not significant'.

6. OPERATIONAL IMPACT ASSESSMENT

DIESEL GENERATOR

6.1. For the typical usage of the diesel generator, annual mean concentrations have been predicted and compared to the long-term air quality objectives for NO_2, PM_{10} and $PM_{2.5}$ for both the discrete receptors identified in Table 2 and the modelled grid.

6.2. As the generators are anticipated to be used largely for testing for one hour periods, the hourly concentrations of NO_2 and PM_{10} have been compared to the relevant hourly objectives for both the discrete receptors.

Process Contribution Screening

Discrete Receptors

6.3. Dispersion modelling for the decreet receptors of a diesel generator has been carried out. Table 13 sets out the predicted maximum Process Contribution (PC) of the relevant pollutant concentrations, and have been compared to the relevant objectives set out in Table 1 in order to be screened (as set out in the EPUK & IAQM (2017) guidance.

Table 13 Maximum PC for Decreet Receptors

	Process Contribution	
Pollutant	**Max Concentration (µg/m³)**	**% of Objective**
Annual Mean NO_2	0.23	0.58
99.79th percentile of 1-hour NO_2	27.51	13.75
Annual Mean PM_{10}	0.0021	0.005
90.4th percentile of 24-hour PM_{10}	0.0000	0.0000
Annual Mean $PM_{2.5}$	0.0021	0.008

6.4. The concentrations are compared to the screening criteria set out EPUK/IAQM (2017) as illuded to previously. This is set out in in Table 14.

Table 14 Assessment Against Screening Criteria

	Process Contribution	
Pollutant	**Screening Criteria (%)**	**Exceeded?**
Annual Mean NO_2	0.5	Yes
99.79th percentile of 1-hour NO_2	10	Yes
Annual Mean PM_{10}	0.5	No
90.4th percentile of 24-hour PM_{10}	10	No
Annual Mean $PM_{2.5}$	0.5	No

6.5. The predicted impacts as a result of the generator for the annual mean NO_2 and the 99.79th percentile of 1-hour NO_2 mean objectives both exceed the relevant criteria, and therefore require further investigation. The annual mean PM_{10}, 90.4th percentile of 24-hour PM_{10} and the annual mean $PM_{2.5}$ objectives do not exceed the relevant criteria, thus the impacts are considered to be negligible.

Modelled Grid

6.6. Dispersion modelling for the modelled grid as set out in Table 3 of a diesel generator has been carried out. Table 15 sets out the predicted maximum Process Contribution (PC) of the relevant pollutant concentrations, and have been compared to the relevant objectives set out in Table 1 in order to be screened (as set out in the EPUK & IAQM (2017) guidance, which is illustrated in Table 16.

Table 15 Maximum PC for Modelled Grid

	Process Contribution	
Pollutant	**Max Concentration (µg/m^3)**	**% of Objective**
Annual Mean NO_2	0.13	0.3
99.79th percentile of 1-hour NO_2	18.86	9.4

Annual Mean PM_{10}	0.0012	0.003
90.4th percentile of 24-hour PM_{10}	0.0000	0.0000
Annual Mean $PM_{2.5}$	0.0012	0.005

Table 16 Assessment Against Screening Criteria

	Process Contribution	
Pollutant	**Screening Criteria (%)**	**Exceeded?**
Annual Mean NO_2	0.5	No
99.79th percentile of 1-hour NO_2	10	No
Annual Mean PM_{10}	0.5	No
90.4th percentile of 24-hour PM_{10}	10	No
Annual Mean $PM_{2.5}$	0.5	No

6.7. The predicted impacts as a result of the generator for all the pollutants in Table 15 do not exceed the relevant criteria at the maximum concentration in the modelled grid, thus the impacts are considered to be negligible. Therefore, a further assessment is not required and has been scoped out.

Predicted Impact on Proposed and Existing Receptors.

Discrete Receptors

6.8. As per Table 14, an assessment on the Predicted Environmental Contribution (PEC) at the identified discrete as a result of the diesel generator is required for the NO_2 annual mean and 99.79th percentile of 1-hour NO_2 objective. Table 17 sets out the NO_2 annual concentrations, with Table 18 doing so for the 99.79th of 1-hour NO_2 concentrations.

Table 17 Predicted Environmental Contribution Annual Mean NO_2 Concentrations

	Predicted Environmental Contribution				
Receptor	**Annual Mean NO_2 (µg/m³)**	**Max PEC as % of AQS**	**Pollutant Concentration Change (µg/m³)**	**% Change Relative to AQAL**	**2022 Impact Descriptor**
R1	30.21	76	0.23	1%	Negligible
R2	30.20	76	0.22	1%	Negligible
R3	30.15	75	0.17	0%	Negligible
R4	30.11	75	0.13	0%	Negligible

Table 18 Predicted Environmental Contribution 99.79th of 1-hour NO_2 Concentrations

	Process Environmental Contribution	
Pollutant	**99th Percentile of 1-hour NO_2 Concentration (µg/m³)**	**Max PEC as % of AQS**
R1	87.46	44
R2	86.75	43
R3	81.98	41
R4	75.93	38

6.9. Table 17 shows the maximum predicted annual mean NO_2 at the decreet receptors fall below the annual mean objective, with the impacts assess as negligible for all receptors. Furthermore, the modelled 99.79th of 1-hour NO_2 concentrations in Table 18 at decreet receptors are below the relevant objective (200 µg/m³).

Modelled Grid

6.10. As per Table 16, an assessment on the Predicted Environmental Contribution for the modelled grid as a result of the diesel generator is not required for any of the pollutant concentrations identified, as the screening criteria is not exceeded at the maximum PC. Therefore, an assessment has been scoped out at this stage as the impacts are considered to be negligible.

FUME CUPBOARD EMISSIONS

6.11. For the typical daily usage of the fume cupboards, annual mean concentrations have been predicted and compared to the long-term environmental assessment level (EAL). The predicted annual mean methanol process contributions for the discrete receptors and modelled grid points are shown below.

6.12. For the spillage event, the point of maximum impact on the discrete receptors and modelled grid point has been calculated for a worst case hourly period, and the greatest concentration of methanol is predicted to be. This is a conservative and pessimistic assessment, as the emission was assumed to persist for one hour, whereas the spillage event is likely to occur for only 30 seconds.

Process Contribution Screening

Discrete Receptors

6.13. Dispersion modelling of emissions related to the fume cupboards has been carried out at the discrete receptors identified in Table 2. Table 19 sets out the precited maximum Process Contribution of methanol, and have been compared to the relevant environmental assessment levels (EALs).

Table 19 Maximum PC at Discrete Receptors

	Process Contribution		
Pollutant	**Max Concentration (µg/m³)**	**Objective (µg/m³)**	**% of Objective**
Annual Mean CH_3OH	0.3381	2,660	0.013
Hourly Mean CH_3OH	811.92	33,300	2.460

6.14. The concentrations are compared to the screening criteria set out previously in Section 3. This is set out in in Table 20.

Table 20 Assessment Against Screening Criteria

	Process Contribution	
Pollutant	**Screening Criteria (%)**	**Exceeded?**
Annual Mean CH_3OH	**0.5**	No
1-hour CH_3OH	10	No

6.15. The predicted impacts as a result of operation of the fume cupboards for the annual mean and hourly methanol mean do not exceed the relevant EALs.

6.16. The annual mean and 1-hour mean methanol objectives do not exceed the relevant screening criteria, thus the impacts are considered to be negligible. A further assessment is therefore not deemed necessary as the impact is considered to be negligible.

Modelled Grid

6.17. Dispersion modelling for the modelled grid as set out in Table 3 for emissions related to the fume cupboards has been carried out. Table 21 sets out the precited maximum Process Contribution of methanol in this grid, and have been compared to the relevant environmental assessment levels (EALs).

Table 21 Maximum PC at Discrete Receptors

	Process Contribution		
Pollutant	**Max Concentration (µg/m³)**	**Objective (µg/m³)**	**% of Objective**
Annual Mean CH_3OH	0.2839	2,660	0.011
Hourly Mean CH_3OH	681.	33,300	2.066

6.18. The concentrations are compared to the screening criteria set out previously in Section 3. This is set out in in Table 22.

Table 22 Assessment Against Screening Criteria

	Process Contribution	
Pollutant	**Screening Criteria (%)**	**Exceeded?**
Annual Mean CH_3OH	**0.5**	No
1-hour CH_3OH	10	No

6.19. The predicted impacts at the maximum gird concentration as a result of operation of the fume cupboards for the annual mean and hourly methanol mean do not exceed the relevant EALs.

6.20. The annual mean 1-hour mean methanol objectives do not exceed the relevant screening criteria, thus the impacts are considered to be negligible. A further assessment is therefore not deemed necessary as the impacts are considered to be negligible.

7. MITIGATION

CONSTRUCTION PHASE

7.1. A construction dust assessment has been undertaken in Section 5 of this assessment and the outcome of which has been utilised within this section to advise upon the adequate level of mitigation that will be required.

7.2. A range of measures are suggested, which could be utilised during the earthworks and construction phases. These measures have been taken out of the IAQM (2016) guidance and the GLA (2014) guidance.

7.3. The following measures relates specifically to the construction activities. Further general guidance on potential mitigation measures can be found in Appendix B.

7.4. Based on the 'low' impact for the earthworks phase of the development, no mitigation beyond those required by legislations measures are required. Additional measures could be applied as part of good practice, and these are defined in Section 8.2 of the IAQM (2016) guidance, as well as in the GLA (2014) guidance.

Demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable

- Only remove the cover in small areas during work and not all at once

Construction:

- Avoid scabbling (roughening of concrete surfaces) if possible; and
- 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.

Trackout:

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

OPERATIONAL PHASE

Generator Impacts

7.5. The assessment has demonstrated that the diesel generator will have a negligible impact on air quality at the discrete receptors and across the modelled grid, and will not lead to exceedances of the air quality objectives outlined in Table 1, thus no additional mitigation measure are required.

7.6. The diesel generator to be installed should meet the specifications set out and utilised in this assessment. If the installed generators do not conform to these specifications, an additional assessment may be necessary, which will be used to inform any mitigation that may be required.

Fume Cupboard Impacts

7.7. Methanol is considered to be the main substance used in the fume cupboards. The resulting concentrations at the discrete receptors and across the modelled grid as a result of the operation of six fume cupboards are predicted to be below the relevant EALs. The impacts are anticipated to be negligible on these receptors. Therefore, it is considered that additional mitigation is not required.

7.8. It is recommended that the fume cupboards comply with British Standards EN 14175. To ensure effective dispersion and compliance with this British Standard, fume cupboards should be regularly inspected at least every 14 months.

7.9. To ensure no recirculation of emissions in the building from the fume cupboards or the combustion plant, it is recommended that ventilation air handling unit intakes are distanced from flue openings.

8. CONCLUSIONS

BASELINE

8.1. The proposed development is situated within an AQMA for exceedances of the NO_2 annual mean objective and PM_{10} 24-hour mean objective.

CONSTRUCTION PHASE

8.2. A construction dust assessment has been undertaken for the demolition and construction phase associated with the proposed development and in accordance with IAQM (2016) guidance on the assessment of dust from and construction and trackout.

8.3. Mitigation measures have not been proposed for the construction activities as the impacts were deemed to be temporary 'negligible' on the sensitive receptors.

OPERATIONAL PHASE

Diesel Generation Assessment

8.4. The results of the dispersion modelling show that the operation of the diesel generator will result in a negligible adverse impact on baseline air quality concentrations at the specified discrete receptor locations and across the modelled grid, with concentrations remaining within the relevant objectives set out in Table 1.

Fume Cupboard Assessment

8.5. Modelling was undertaken using emissions information provided by the client, and a series of conservative assumptions:

- The proposed development was modelled to operate continuously and in the event of a spill; and
- All results presented are the maximum concentrations from a 5-year modelling period.

8.6. The results of the dispersion modelling show that the operation of the fume cupboards will result in a negligible adverse impact at the specified discrete receptor locations and across the modelled grid.

8.7. It can therefore be concluded that the proposed development does not give rise to any significant air quality impacts on human health receptors and is fully compliant with national, regional and local planning guidance.

APPENDIX A - CONSTRUCTION DUST ASSESSMENT METHODOLOGY

The criteria developed by IAQM (2014) is divides the activities on construction sites into four different types to assess their different level of impacts upon residential dwellings. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout

The assessment procedure includes four steps summarised below:

STEP 1 - SCREENING THE NEED FOR A FULL ASSESSMENT

The following screening criterion has been applied to the assessment: An assessment will normally be required where there is:

- A 'human' within:
  - 350 m of the Site boundary; or
  - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- An 'ecological' within:
  - 50 m of the Site boundary; or
  - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

Should this criterion not be met it can be concluded that the level of risk upon residential dwellings is negligible and there the effects are not significant, and therefore no mitigation measures will be required.

STEP 2 - ASSESS THE RISK OF DUST ARISING

The Site is given a risk classification based upon the following two factors:

- The scale and nature of the construction works, to provide the potential dust emission magnitude (Step 2A); and
- The sensitivity of the area to the dust impacts (Step 2B).

These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to the site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

STEP 2A - DEFINE THE POTENTIAL DUST EMISSION MAGNITUDE

The dust magnitude is categorised by the following:

- Small;
- Medium; or
- Large.

The IAQM provide a brief description upon what could apply for each classification (as set out in Table A1) and should be based upon professional judgement.

Table A1 Dust Magnitude Classification

Magnitude Class	
	Demolition
Large	Total building volume >50,000m^3, potentially dusty material, on-site crushing and screening, activities >20m above ground level.
Medium	Total building volume 20,000-50,000m^3, potentially dusty construction material, demolition activities 10-20m above ground level.
Small	Total building volume <20,000m^3, construction material with low potential for dust release, demolition activities <10m above ground, works during wetter months.
	Earthworks
Large	Total site area over 10,000 m^2, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds > 8 m in height, total material moved > 100,000 tonnes.
Medium	Total site area between 2,500 to 10,000 m^2, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 4 - 8 m in height, total material moved 20,000 to 100,000 tonnes.
Small	Total site area less than 2,500 m^2. Soil type with large grain size (e.g. sand), < 5 heavy earth moving vehicles active at any one time, formation of bunds < 4 m in height, total material moved < 10,000 tonnes earthworks during winter months.
	Construction

Large	Total building volume over 100,000 m^3, activities include piling, on-site concrete batching, and sand blasting. Period of activities more than two years.
Medium	Total building volume between 25,000 and 100,000 m^3, use of construction materials with high potential for dust release (e.g. concrete), activities include piling, on-site concrete batching. Period of construction activities between one and two years.
Small	Total building volume below 25,000m^3, use of construction materials with low potential for dust release (e.g. metal cladding or timber). Period of construction activities less than one year.
	Trackout
Large	> 50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m. (Trackout may occur up to 500m from the site entrance).
Medium	10-50 HDV (>3.5t) outwards movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m. (Trackout may occur up to 200m from the site entrance).
Small	<10HDV (>3,5t) outward movements in any one day. (Trackout may occur up to 50m from the site entrance).

STEP 2B - DEFINE THE SENSITIVITY OF THE AREA

The sensitivity of the area is defined by taking account of the following factors and the criteria set out in Tables(s) A2 to A5:

- The type of demographic in the area;
- The distance and number of residential dwellings; and
- Background PM_{10} concentrations.

Table A2 Defining Sensitivity

Sensitivity	Human	Ecological
High	Very densely populated area, 10-100 dwellings within 20m of site. Annual mean concentrations of PM10 close to/in exceedance of the national objective (40 µg m^3). Very sensitive locations (e.g. residential properties, hospitals, schools, care homes).	Internationally or nationally designated site, the designated features may be affected by dust soiling. A location where there is dust sensitive species present.
Medium	Densely populated area, 1-10 dwellings within 20m of site. Annual mean concentrations of PM10 below the national objective (> 28 µg m^3).	Nationally designated site where the features may be affected by dust deposition. A location with a particularly important plant species

	Medium sensitivity location (e.g. office and shop workers).	where its dust sensitivity is unknown.
Low	Sparsely populated area, 1 dwelling within 20m of site. Annual mean concentrations well below the national objectives (< 28 µg m^3). Low sensitivity locations (e.g. public footpaths, playing fields, shopping streets).	Locally designated site where the features may be affected by dust deposition.

Table A3 Sensitivity of the Area to Effects on People and Property from Dust Soiling

Sensitivity	Number	Distance from the Source (m)			
		20	50	100	350
High	>100	High	High	Medium	Low
	10 – 100	High	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Low	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A4 Sensitivity of the Area to Human Health Effects

Sensitivity	Annual Mean PM_{10}	Number	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

Table A5 Sensitivity of the Area to Ecological Effects

Sensitivity	Distance from the Source (m)	
	<20	**<50**
High	High	Medium
Medium	Medium	Low
Low	Low	Low

STEP 2C – DEFINE THE RISK OF IMPACTS

The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The IAQM provides the matrix in Table A6 as a method of assigning the level of risk for each activity.

Table A6 Defining the Risk of Dust Impacts

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

Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

STEP 3 – INDENTIFY THE NEED FOR SITE SPECIFIC MITIGATION

From the identification of the risk of impacts with no mitigation, it is possible to determine the specific mitigation measures that can be applied in relation to the level of risk associated with the construction activity.

STEP 4 – DETERMINE SIGNIFICANT IMPACTS

The IAQM does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant'.

APPENDIX B- GENERAL MITIGATION MEASURESS

Site Management

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Develop a Dust Management Plan.
- Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
- Display the head or regional office contact information.
- Record and respond to all dust and air quality pollutant emissions complaints.
- Make a complaints log available to the local authority when asked.
- 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.
- 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; and
- 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.

Preparing and Maintaining the Site

- Plan site layout: machinery and dust causing activities should be located away from receptors.
- Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.
- Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution.

- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials from site as soon as possible.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Carry out regular dust soiling checks of buildings within 100m of site boundary and cleaning to be provided if necessary.
- Agree monitoring locations with the Local Authority.
- Where possible, commence baseline monitoring at least three months before phase begins; and
- Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.

Operating Vehicle / Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.
- Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance.
- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where possible.
- 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).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

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.
- Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).
- Use enclosed chutes, conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Reuse and recycle waste to reduce dust from waste materials; and
- Avoid bonfires and burning of waste materials.

APPENDIX C- DIESEL GENERATOR

RATED SPEED NOMINAL DATA: 1500 RPM

GENSET POWER WITH FAN		**EKW**	**240.0**	**180.0**	**120.0**	**60.0**	**24.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BKW**	**277**	**210**	**144**	**80.3**	**40.5**
TOTAL NOX (AS NO2)		G/HR	1,803	818	363	198	209
TOTAL CO		G/HR	498	559	509	243	145
TOTAL HC		G/HR	15	16	36	46	36
TOTAL CO2		KG/HR	176	141	103	64	35
PART MATTER		G/HR	11.1	25.1	17.3	17.5	9.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,360.1	1,342.8	810.3	727.9	1,629.6
TOTAL CO	(CORR 5% O2)	MG/NM3	652.5	915.1	1,134.2	816.9	1,053.0
TOTAL HC	(CORR 5% O2)	MG/NM3	16.7	22.5	69.4	143.8	210.6
PART MATTER	(CORR 5% O2)	MG/NM3	11.7	34.2	31.6	57.8	45.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,150	654	395	355	794
TOTAL CO	(CORR 5% O2)	PPM	522	732	907	653	842
TOTAL HC	(CORR 5% O2)	PPM	31	42	129	268	393
TOTAL NOX (AS NO2)		G/HP-HR	4.97	2.95	1.89	1.84	3.86
TOTAL CO		G/HP-HR	1.37	2.02	2.65	2.26	2.67
TOTAL HC		G/HP-HR	0.04	0.06	0.19	0.42	0.67
PART MATTER		G/HP-HR	0.03	0.09	0.09	0.16	0.17
TOTAL NOX (AS NO2)		LB/HR	3.98	1.80	0.80	0.44	0.46
TOTAL CO		LB/HR	1.10	1.23	1.12	0.54	0.32
TOTAL HC		LB/HR	0.03	0.04	0.08	0.10	0.08
TOTAL CO2		LB/HR	389	311	227	140	78
PART MATTER		LB/HR	0.02	0.06	0.04	0.04	0.02
OXYGEN IN EXH		%	6.9	8.6	10.4	12.4	14.8

APPENDIX D- WINDROSES

Figure D.1 – 2015 Heathrow Windrose

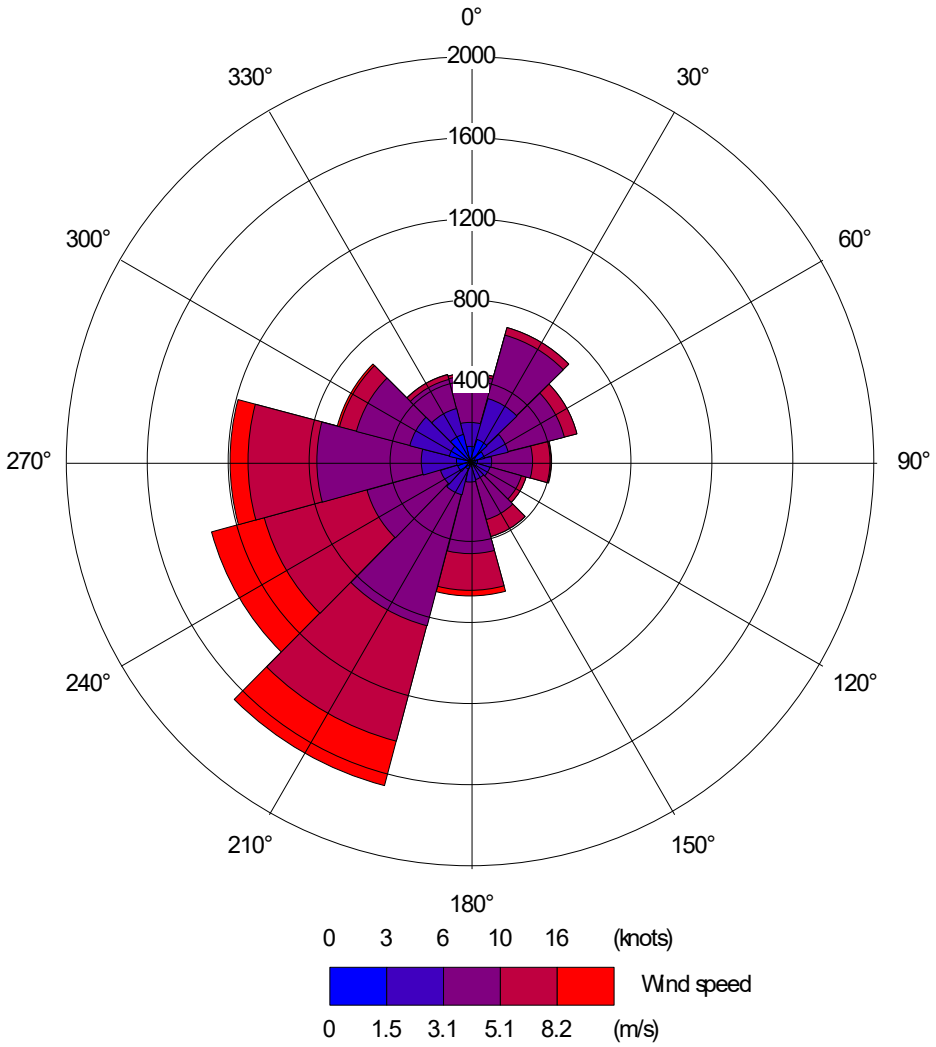


Figure D.2 – 2016 Heathrow Windrose

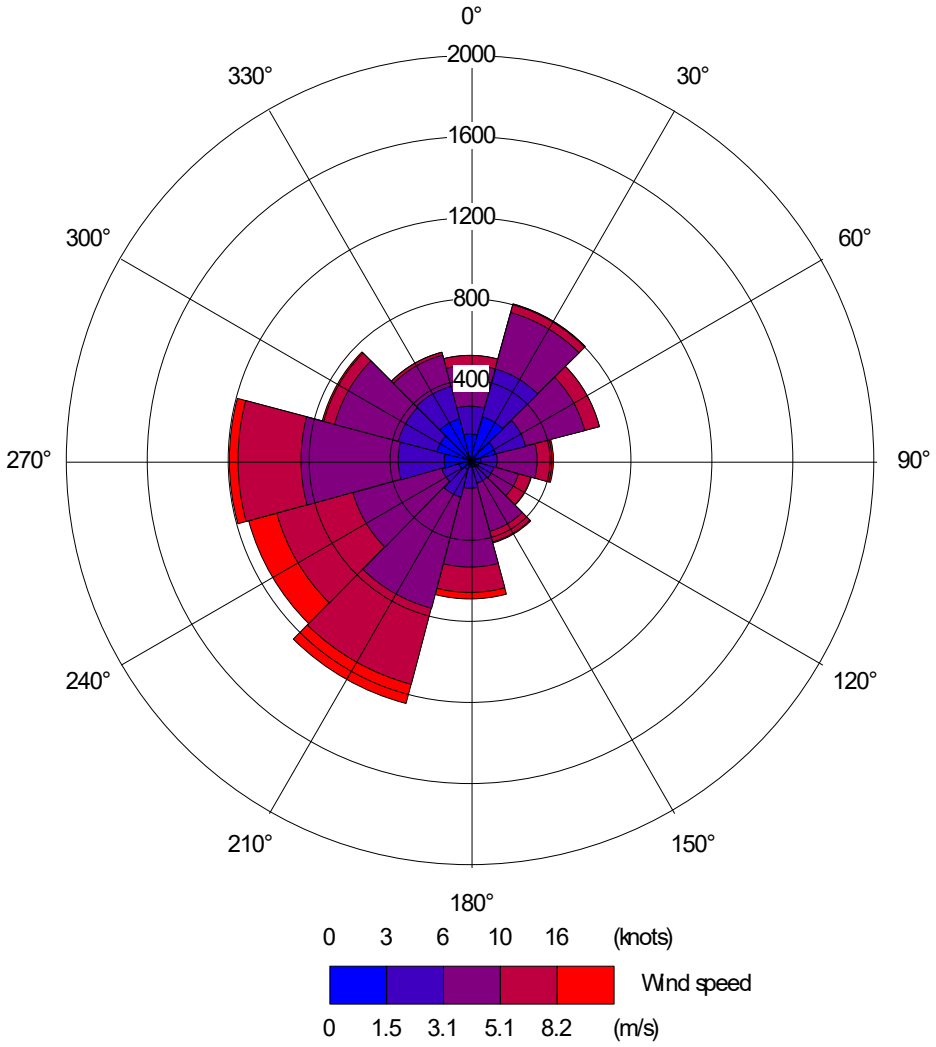


Figure D.3 – 2017 Heathrow Windrose

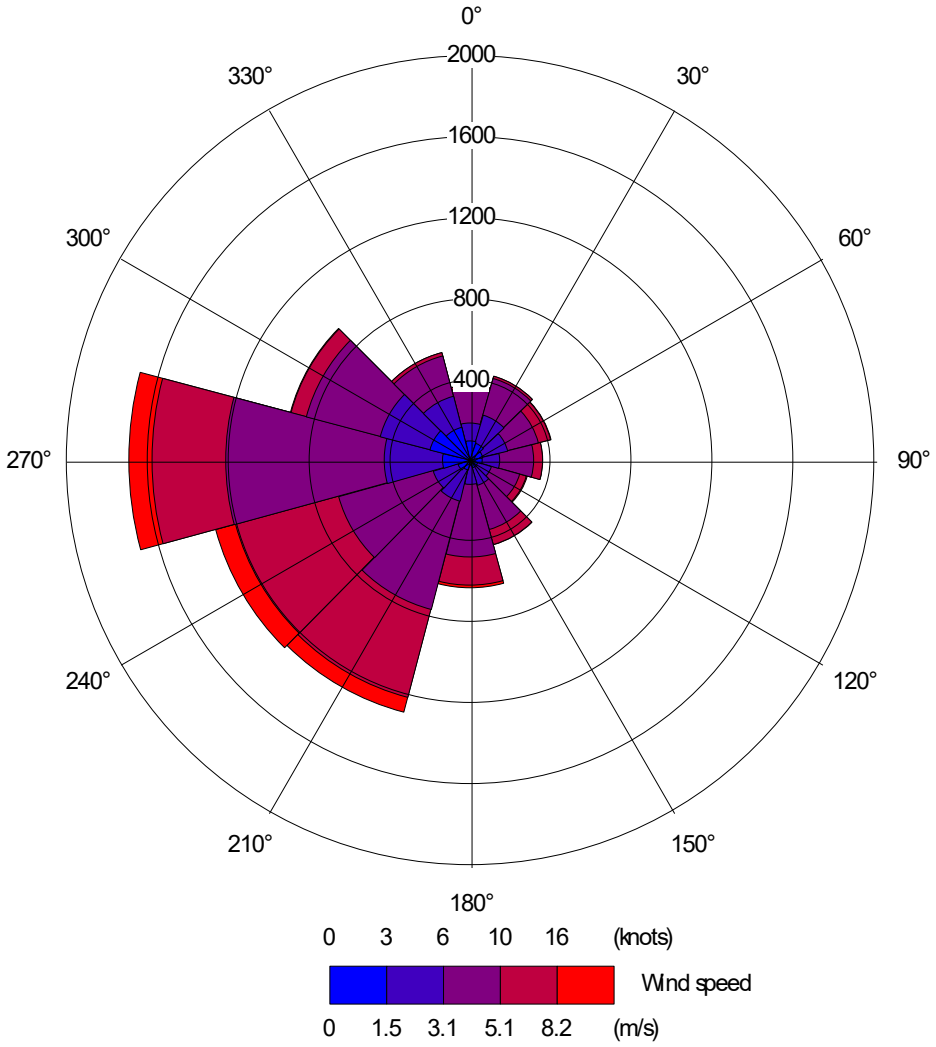


Figure D.4 – 2018 Heathrow Windrose

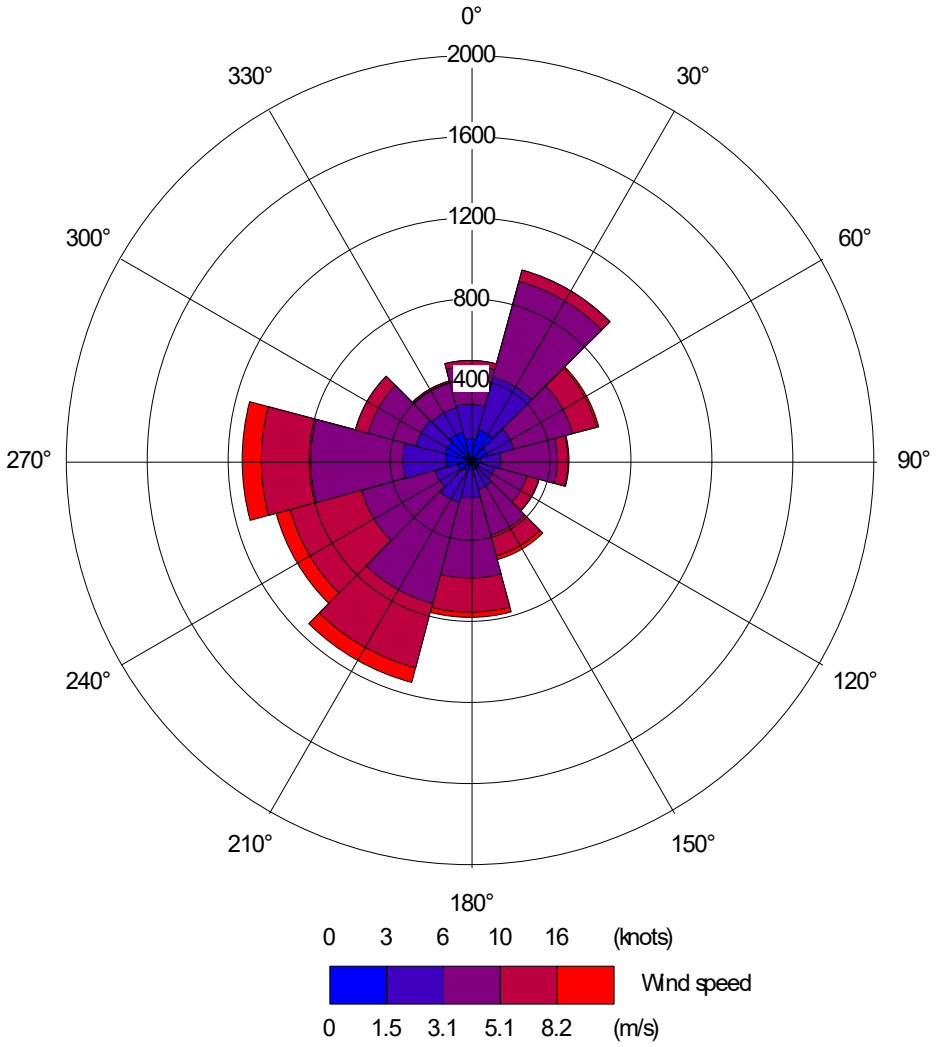
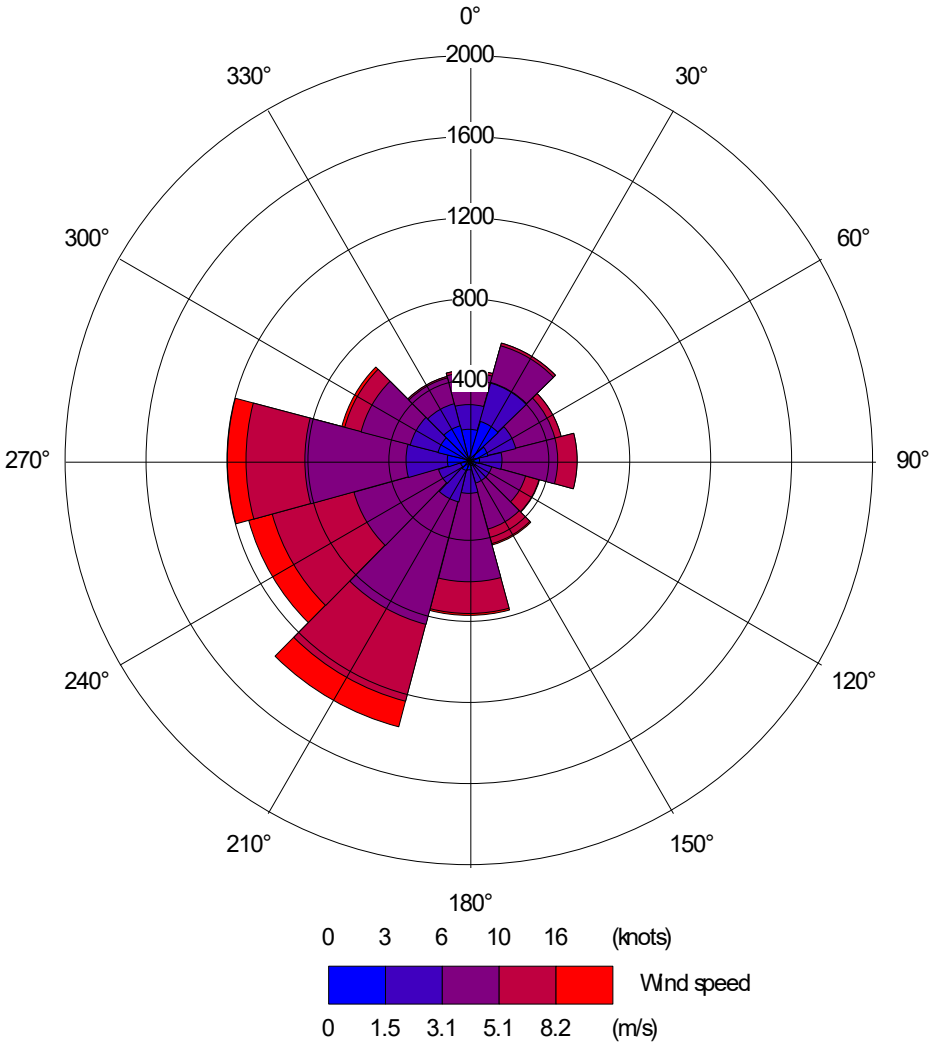


Figure D.5 – 2019 Heathrow Windrose



Consultation Record

Consultation meeting with residents was held at 12:00pm on 6 June 2022 at 85 Gray's Inn Raod, WC1X 8TX. The purpose of the meeting was to explain the Construction Management Plan (CMP) and provided an opportunity for a Q & A session for residents with the proprety owners, Clearbell and the Contractors GPF Lewis.

Issues Raised by Residents	Solutions proposed by Developer
1) Requested a full list of key dates in relation to pilling work etc.	A timetable will be provided to residents prior to commencement of works. Notification of the proposed Roger Street closure will be provided to the residents once submitted to the Local Authority. Note only Roger Street section opposite 85 Grays Inn Road will be closed for proposed three times over the programme over weekends periods from 9am - 4pm each day.
2) Keeping up to date with the progress of the work and kept in the loop regarding any changes which may cause disruptuption.	GPF Lewis have confirmed that they will issue a Monthly newsletter to keep residents up to date with the construction work on site. It was also agreed on site that GPF Lewis will issue a delivery schedule weekely to the Brownlow Mews Community and those who have individually reqested.
3) Concern regarding whether the pilling work would be disruptive.	Clearbell/ GPF Lewis confirmed at the site meeting to residents that all work would stop if the noise receptors show evidence of noise levels going above national control levels. Close communication of piliing works will be done with the restaurant as agreed with the party wall surveyors. Noisy work restriction will be in effect. Where noise or vibration from the construction of the proposed development exceed the significant observed adverse effect levels or at the reasonable request of the council, works shall take place on a 2 hours on/off basis. For Example: Monday to Friday 08:00 - 10;00, 12:00 - 14:00 & 16:00 - 18:00 and On Saturdays 11:00 - 13:00.
4) The full closure of Brownlow Mews would prevent access to homes, especially during the weekends and would be highly inconvienant for those living along brownlow mews.	Clearbell confirmed that Brownlow Mews will be kept open by suspending two parkings bays to allow access. Barriers for a working area for health and safety reasons will be kept and two traffic marshalls will be on site at all times to manage access and safety. GPF Lews's traffic marchalls will safely manage all vehicle and pedestrian access in and out of Brownlow Mews. Larger barrier will be used for segregation as reqested by Camden Council.

5) Safety precautions in place for accessing Brownlow Mews due to the Strip out work being very messy and hazourdous.	Clearbell confirmed that the strip out works have been completed and there should now be minimal messy works with majoirty of the works taking place internally. The site manager ensured that there will be no more debris left on Brownlow Mews especially as all the skips and any further waste material will be stored within the building, rather than positioned on Brownlow Mews as previously. There will be a 'Wait & Load" vehicles loaded outside the site gates in the Mews, but no skips will be on the Mews Road. Strict control measures will be in place controlling vehicles being loaded and unloaded.
6) Concerns regarding dust management.	All materials are being removed from site (demolished brick facades & spoil materials from Piling & Groundworkds) and will be mangaged and procedures will be implemented to safely control the removal of the above-mentioned materials. Piling works will commence on 18 July for 5 days.
7) A direct contact for when there is evidence on site of concerning actions/work.	The direct contact for the works will be Pieter Snyman - Tel: 07826873318 Email: pieter.snyman@gpflewis.co.uk
8) Concern regarding members of the public parking in the 2 suspended parking bays and obstructing the entance onto Brownlow Mews.	Temporary signs will be fixed above the 2 parking bays and entrance to Brownlow Mews to avoid memebers of the public parkingg temporarility and blocking access.

At the end of the meeting, the residents email address' were collected by SPF Lewis in order for SPF Lewis to issue out weekly newsletters and provide a direct form of contact.

List of residents who requested direct contact:	
eugeneokeeffe@btinternet.co	21E Brownlow Mews WC1N 2LA
Danni.cox@clearcast.co.uk	4 Roger Street – Clearcast Business
jamestomkinson@btopenworld.com	9A Brownlow Mews
Tessa.ogden@btopenworld.com	9A Brownlow Mews
chris@bennington.me	8 Brownlow Mews
Elanamhenson@aol.com	Churston Mansions – 186 Grays Inn Road

Please note not all residents chose to leave an email address, though we will also be issueing emails to the residents 'Brownlow Mews Community Email.

CONSTRUCTION MANAGEMENT PLANS

Cumulative Impact Area Central London

Statement & Checklist

Planning Reference 2021/3673/P

Site Address 85 Grays Inn Road London WC1X 8TX

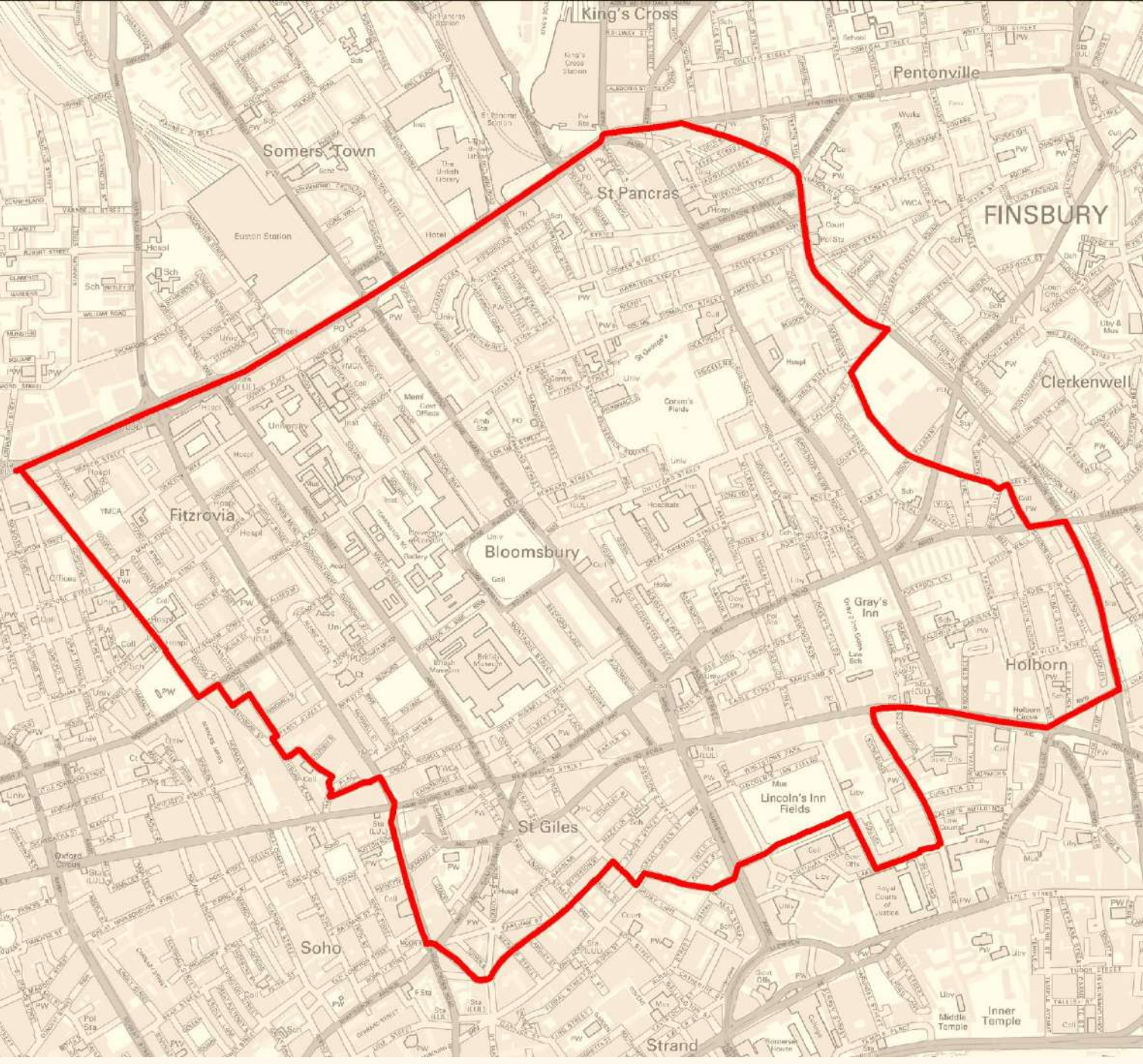
Camden

Statement

The Central London area represents just under a quarter of the total planned development activity in the borough despite only representing 13% of the geographical area. In addition to activity related to the redevelopment of sites, there is a significant amount of commercial buildings that undertake refurbishment works that have similar impacts but are not controlled by planning consents. The interaction of high levels of construction and construction traffic with established business/residential travel patterns is giving rise to heightened community concerns and mean that there is an increased need for careful management of construction activities and their potential impacts

The area is characterised by historic buildings with narrow streets alongside high density modern developments, with residential and commercial operations sitting side by side - the area also attract a lot of tourism, and as such the movement of people is much greater than just residents and employees. The busy nature of this area means that even the smallest redevelopment may give rise to complications with traffic and reports of public nuisance.

Noise and vibration from construction sites has the potential to give rise to significant adverse effects on health and quality of life. Based on our experience we know that some of these impacts can be effectively managed. However, this potential is affected by the challenges posed by Cumulative Impacts where the impacts of various construction sites create effects of greater significance than or different to that of each individual construction site. Managing the impacts of various sites in one area and ensuring a consistent approach to noise and vibration mitigation can be a major challenge in its own right.


King's Cross
Pentonville
Somers Town
St Pancras
FINSBURY
Euston Station
Clerkenwell
Fitzrovia
Bloomsbury
Gray's Inn
Holborn
Lincoln's Inn Fields
St Giles
Soho
Strand
Middle Temple
Inner Temple

Statement

Redevelopment proposals need think carefully how a site will be delivered, considering issues well beyond the site boundary, in particular:

- The proximity of properties, in particular the potential for structure borne noise and dust control
- Co-ordination with neighbouring sites, considering both construction traffic and business that require deliveries
- Communication and availability of data to a wider audience who may not be in close proximity to the development but nonetheless will be impacted, such as those who work in the area.
- The area is a designated Air Quality Management Area (AQMA) and the Council has made a commitment to reduce particulate air pollution to levels recommended by the World Health Organisation. In response, all sites in the Central London area will be required to undertake the following additional obligations as part of their Construction Management Plan. Developers/ Contractors will be required to justify (and for such justification to be made public) why any of the following elements cannot be achieved:-

WORKS

- Assumption of no working at weekends – any proposals for weekend working will be considered on a case by case basis and communicated to local residents 14 days in advance of works
- Prior to proposing any road closures, weekend working or oversize deliveries (to which all require express approval from the Council) the contractor must provide evidence that they have approached neighbouring sites and attempted to coordinate any proposals with those of the neighbouring site.
- Prior to connecting a site to utilities (Gas, Water, Electric, Telecoms) the contractor must provide evidence that they have approached neighbouring sites (and the utilities providers) and attempted to coordinate connection between neighbouring sites and the various utilities.

COMMUNICATION

- CMPs will be made available online (both prior to approval and post approval) such as on a dedicated webpage
- All logs (accident, complaint) will be made available online and a physical copy made available for residents to use and view
- Where there are neighbouring site or sites in close proximity that effect the local highway network, joint communication (i.e. Newsletters) will be required.
- Construction Working Groups will be conducted jointly with neighbouring sites
- All environmental monitoring data to be made available on-line and on site boards

DELIVERIES

- A delivery log, specifying the type of vehicle, its purpose, registration number and time on site must be maintained online and updated at least on a weekly basis.
- Contractors will be required to provide evidence that they have communicated their proposed deliveries with neighbouring construction sites and any other business, and have coordinated the deliveries where possible.
- No deliveries shall be scheduled that will require the driver to wait outside the site before 8.00am (and vehicles will not be permitted to circulate the highway to avoid this requirement)
- A pre-booking system for managing deliveries must be operated. All deliveries must contact site at least 20min before arrival to allow the necessary checks to be undertaken

Statement

MITIGATION AND RESPITE

- Adoption of localised mitigation measures such as washing the windows of neighbouring properties.
- Developments will be required to pay a Construction Impacts Bond to the Council to support the cost of Council officers addressing matters that should have been addressed by the contractor
- Dedicated wheel washing with rumble grids must be utilised unless agreed otherwise by the Council
- Green infrastructure, such as green screens/hoarding, should be utilised. Installation of filtration units, particularly where the site is near (within 250m) vulnerable receptor facilities (such as schools, nursing homes and hospitals)

SITE CONDUCT

- A firm disciplinary policy, such as a two strike warning before removal from site must be operated
- Contractors must attain the Considerate Contractors Scheme ‘Exceptional’ score
- Contractor must employ an enforcement process to ensure that contractors vehicles do not idle
- A plan and process to encourage site operatives to arrive at the site by sustainable methods (including car sharing / pooling) must be presented and communicated
- CLOCS compliance monitoring results need to be reported to council
- All sites must ensure that Traffic Marshalls /Banksmen are appropriately trained, and that there is at least one operative on duty at any given time that has at least has 1+ year of experience in that role.
- The site must be kept damp at all times, proposed equipment for this purpose must first be agreed to by the local authority.
- Weekly ‘toolbox talks’ should be conducted with all site operatives to advise of the requirements expected by the Council.
- Site operatives should be identifiable by the public to the site, such as using a uniformed colour of work jackets or branding.

MACHINERY AND EQUIPMENT

- All heavy goods vehicles (HGVs) are required to be Euro VI standard or better, and light duty vehicles (LDVs) are required to be Euro 4 petrol or Euro 6 for diesel, or better. Preference should be for zero to low emission equipment
- NRMM should be to stage IV of EU Directive 97/68/EC as a minimum, and an up-to-date NRMM log must be kept on-site and shared with Camden officers
- The site must connect to mains prior to works commencing to remove the need for diesel generators
- At least four real-time PM10 monitors (certified to MCERTS standard) must be used on site in continuous operation for the duration of the build (from three months prior to implementation of planning permission through to completion on site), at locations and to thresholds approved by the Council. Camden officers must be provided access to the raw data via an online platform, and automated exceedance alerts should be sent to AirQuality@camden.gov.uk in addition to the contractor/developer on-site representatives
- Web-enabled monitoring equipment, allowing real time information accessible by the public should be deployed – including the use of emerging technologies.
- Environmental monitoring summary reports should be sent to Camden officers on a monthly basis

CHECKLIST

All development sites in the Cumulative Impact Area which are required to submit a Construction Management Plan (CMP) or Demolition Management Plan (DMP) are required to complete this checklist.

The checklist will need to be presented for comment to the local community as part of the pre-submission CMP/DMP. The Council will not accept the submission of the CMP/DMP unless it receives both the completed CIA checklist . If a particular requirement cannot be met, stipulate the reason why and propose an alternative solution to achieve the objective

	Requirement	Response
WORKS	No noisy working at weekends – any proposals for weekend working will be considered on a case by case basis and communicated to local residents 14 days in advance of works	No weekend Noisy works are planned .
	Prior to proposing any road closures, weekend working or oversize deliveries (to which all require express approval from the Council) the contractor must provide evidence that they have approached neighbouring sites and attempted to coordinate any proposals with those of the neighbouring site	All Road Closures , Crane lifts will be planned and approval processes followed with notifications issued to all parties involved and neighboring properties.
	Prior to connecting a site to utilities (Gas, Water, Electric, Telecoms) the contractor must provide evidence that they have approached neighbouring sites (and the utilities providers) and attempted to coordinate connection between neighbouring sites and the various utilities	New power connect is planned for a new substation by UKPN . Works will be closely monitored with UKPN from the start of the project.
COMMUNICATION	CMPs will be made available online (both prior to approval and post approval) such as on a dedicated webpage	Web-page links to the CMP have been set-up as part of the liaison process in-place.
	All logs (accident, complaint) will be made available online and a physical copy made available for residents to use and view	The logs will be added to the Web-page above once the project starts on site .
	Where there are neighbouring site or sites in close proximity that effect the local highway network, joint communication (i.e. Newsletters) will be required	After review there are no neighbouring site in very close proximity that will affect the highway network.
	Construction Working Groups will be conducted jointly with neighbouring sites	
	All environmental monitoring data to be made available on-line and on site boards	

	Requirement	Response
DELIVERIES	A delivery log, specifying the type of vehicle, its purpose, registration number and time on site must be maintained online and updated at least on a weekly basis	GPF Lewis will have a delivery log recoding deliveries as part of the delivery schedule agreeing booked-in deliveries. Large deliveries affecting surrounding properties & Neigbours will be noted communicated through the newsletters. No deliveries before 08h00 will be adhered too and communicated to all Sub-Contractors as part of their start-up meeting and agreed in their orders. The GPF Lewis delivery schedule will only allow pre-booked in deliveries. Delivery drives will always have the site contact's number to confirm deliveries are on track.
	Contractors will be required to provide evidence that they have communicated their proposed deliveries with neighbouring construction sites and any other business, and have coordinated the deliveries where possible	
	No deliveries shall be scheduled that will require the driver to wait outside the site before 8.00am (and Vehicles will not be permitted to circulate the highway to avoid this requirement)	
	A pre-booking system for managing deliveries must be operated. All deliveries must contact site at least 20min before arrival to allow the necessary checks to be undertaken	
MITIGATION AND RESPITE	Adoption of localised mitigation measures such as washing the windows of neighbouring properties	Party wall awards will include agreements with neighbouring properties.
	Developments will be required to pay a Construction Impacts Bond to the Council to support the cost of Council officers addressing matters that should have been addressed by the contractor	Item will be looked into.
	Dedicated wheel washing with rumble grids must be utilised unless agreed otherwise by the Council	On site reviews will be carried out , however constructions works on the above project doesn't consist of major Groundworks. Green infrastructure will be considered, however the project address isn't close to any vulnerable receptors.
	Green infrastructure, such as green screens/hoarding, should be utilised. Installation of filtration units, particularly where the site is near (within 250m) vulnerable receptor facilities (such as schools, nursing homes and hospitals)	

	Requirement	Response
SITE CONDUCT	A firm disciplinary policy, such as a two strike warning before removal from site must be operated	The two strike disciplinary warning system will be in-place when construction works commences. The above Project is registered with the CCS Scheme and require a score of 42 and above for BREEAM. The no idle policy will be part of the Sub-contractors contract works orders. Contractors will be advised to target to minimize carbon foot print & evidence will be recorded. Registration and reporting will be done prior to commencing on site. GPF Lewis only appoints trained operative and will ensure on this project they have a minimum of 1 year plus experience. Demolition RAMS for the above project is being prepared and the damping down and plant selection will be included for review/ approval. Weekly Toolbox talks are standard practice with GPF Lewis and Council requirement section will be included / discussed / enforced. Branded PPE is part of GPF Lewis standard practice.
	Contractors must attain the Considerate Contractors Scheme 'Exceptional' score	
	Contractor must employ an enforcement process to ensure that contractors vehicles do not idle	
	A plan and process to encourage site operatives to arrive at the site by sustainable methods (including car sharing / pooling) must be presented and communicated	
	CLOCS compliance monitoring results need to be reported to council	
	All sites must ensure that Traffic Marshalls / Banksmen are appropriately trained, and that there is at least one operative on duty at any given time that has at least has 1+ year of experience in that role.	
	The site must be kept damp at all times, proposed equipment for this purpose must first be agreed to by the local authority.	
	Weekly 'toolbox talks' should be conducted with all site operatives to advise of the requirements expected by the Council.	
	Site operatives should be identifiable by the public to the site, such as using a uniformed colour of work jackets or branding.	

	Requirement	Response
MACHINERY AND EQUIPMENT	All heavy goods vehicles (HGVs) are required to be Euro VI standard or better, and light duty vehicles (LDVs) are required to be Euro 4 petrol or Euro 6 for diesel, or better. Preference should be for zero to low emission equipment	All vehicles will comply .
	NRMM should be to stage IV of EU Directive 97/68/EC as a minimum, and an up-to-date NRMM log must be kept on-site and shared with Camden officers	85 Grays Inn Road project has been NRMM registered .Camden Council will be issued with updates once project commences.
	The site must connect to mains prior to works commencing to remove the need for diesel generators	Mains Power already on site.
	At least four real-time PM10 monitors (certified to MCERTS standard) must be used on site in continuous operation for the duration of the build (from three months prior to implementation of planning permission through to completion on site), at locations and to thresholds approved by the Council. Camden officers must be provided access to the raw data via an online platform, and automated exceedance alerts should be sent to AirQuality@camden.gov.uk in addition to the contractor/developer on-site representatives	Dust Monitoring is in place prior to works commencing . Data will be provided.
	Web-enabled monitoring equipment, allowing real time information accessible by the public should be deployed – including the use of emerging technologies	
	Environmental monitoring summary reports should be sent to Camden officers on a monthly basis	
	The use of powered, percussive breaking equipment should be avoided. Where this is considered not possible early discussions with the Council.	

A copy of this document shall be made available to the appointed Building Contractors and their sub-contractors

LBC LEGAL DUTIES and EXPECTATIONS REGARDING BUILDING CONSTRUCTION/DE-CONSTRUCTION SITES

Addendum to CMR - CMP WORKING FRAMEWORK

Site: *85 Grays Inn Road*
Planning number: 2021/3673/P
Date: 23/05/2022
Revision: 1

This document is part of a site specific CMP framework, in which the developer and the principal contractor agree to ensure that environmental impacts from the construction of the proposed impacts do not give rise to significant adverse effects on health and quality of life.

The Developer and the Main Contractor agree to provide the council the necessary information to demonstrate the implementation of best practice and compliance with the relevant legal and contractual requirements.

1. TIME FOR NOISY OPERATIONS

Construction activities and ancillary works which are audible at the site boundary shall normally be carried out between the following hours:

- Mondays to Fridays 08.00 – 18.00
- Saturdays 08.00 – 13.00

Where noise or vibration from the construction of the proposed development exceed the significant observed adverse effect levels or at the reasonable request of the council, works shall take place on a 2 hours on/off basis. For example:

- ON - Monday to Friday 08:00 - 10:00, 12:00 - 14:00 & 16:00 - 18:00
- ON - Saturdays 11:00 - 13:00.

2. NOISE AND VIBRATION CONTROL

The contractor shall undertake a detailed construction noise assessment and produce a comprehensive noise and vibration strategy, which shall include the following:

(ii) baseline noise and vibration surveys (where required)

(iii) On-site and off-site mitigation measures

(iv) Noise and vibration monitoring proposal

(v) A noise and vibration trigger action plan setting out the steps to be taken in the event that predicted and proposed trigger action levels, are exceeded.

(vi) Noise reports should be sent to Camden's pollution team at pollutionduty@camden.gov.uk

3. CONTROL OF VISIBLE DUST AND ITS MONITORING

- Prevention
- Suppression
- Containment

A copy of this document shall be made available to the appointed Building Contractors and their sub-contractors

4. MEETING AIR QUALITY CRITERIA (NON VISIBLE DUST) AND ITS MONITORING

Air Quality Requirements

- Contractors are required to monitor and manage air quality in accordance with current best practice guidance (Mayor of London Control of Dust and Emissions During Construction and Demolition SPG), measuring for PM10 using real-time analysers which have MCERTS 'indicative' or an equivalent certification for accuracy/precision.

- If the site's air quality assessment finds dust risk level to be 'medium', two monitors are required. If the risk level is 'high', four monitors are required.

- If the risk level is 'high', four monitors are required.

- Monitoring should start at least three months prior to commencement of works on site, and must continue until practical completion, i.e. real-time dust monitoring is required for all phases of development, therefore the developer must ensure that dust monitoring is passed between demolition and construction contractors etc.

- Monitoring locations/positions and the justification for these must be checked with and approved by Camden's air quality team: AirQuality@camden.gov.uk.

- Real-time monitoring should be supplemented with visual and qualitative monitoring of construction dust.

Trigger values	Amber Alert 15 mins Average	Red Alert 15 mins Average
	150µg/m^3	250µg/m^3

- **AMBER ALERT.** 'amber' trigger level (at which point the cause of the dust should be immediately investigated and remedial action taken to mitigate it)

- **RED ALERT**. If this level is reached, works on site must be stopped until conditions improve.

YOUR ATTENTION IS DRAWN TO THE FOLLOWING:

(i) Taking into account the baseline monitoring conditions, repeated exceedances of the upper trigger level may lead ultimately to the Council moving to halt works on site.

(ii) Monthly AQ summary reports should be sent to Camden's air quality team at AirQuality@camden.gov.uk, and these should note (at the very least) the current positions of the monitors (including photographs), the number of trigger level exceedances, data coverage, and narrative on site works and remedial dust mitigation measures applied.

(iii) The AQ reports should also be made publicly available, either by hosting online or by posting the data summaries on the site hoarding.

(iv) Automated trigger level exceedance alert emails should also go to the above email address as well as to the developer/contractor on-site representative/s for managing air quality. Failure to provide data or to manage air quality may lead to an injunction.

5. RODENT CONTROL

- Before any works ascertain the presence of rats and mice and how they will be destroyed if found on site.
- Monitoring programme

GENERAL AGREED UNDERSTANDINGS.

(a) London Borough of Camden under the Control of Pollution Act 1974, Environmental Protection Act 1990 and Prevention of Damage by Pest Act 1949, has the legal duty to protect from the effects of noise (including vibration), statutory nuisances and pest prevention from rodents to those who are living in the proximity of the proposed works.

(b) The Council expect to receive no valid complaints during the entire duration of the proposed works to be undertaken at, ***85 Grays Inn Road, London WC1X 8TX*.**

(c) The CMP shall be a living document to be reviewed/modified as soon as problems arise or at the reasonable request of the council.

(d) A proactive approach towards the management of environmental impacts will be incorporated and enforced throughout the duration of the project.

Noise and Vibration

(e) All reasonable steps shall be implemented in the design and construction of the proposed development so that noise and vibration from the construction do not give rise to significant adverse effects on health and quality of life.

(f) Where noise or vibration from construction exceeds the defined significant observed adverse effect levels or at the reasonable request of the council, some form of respite shall be offered.

(g) Best practicable means (BPM), as defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990, shall be applied during all construction works to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors.

(h) Consideration will be given to the recommendations contained within BS5228:2009+A1:2014, approved by the Secretary of State as the Code of Practice for noise and vibration control on construction and open sites.

Dust

(i) No demolition works shall be commenced without an adequate water supply to cover the working areas.

Pests

A copy of this document shall be made available to the appointed Building Contractors and their sub-contractors

(j) At all times the site shall be kept free, so far as is reasonable practicable, from rats and mice. (Prevention of Damage by Pests Act 1949, part 'H' of the Building Regulations (Drainage & Waste Disposal)).

Community liaison

(k) A programme of community liaison will be carried out, including regular engagement meetings, notification of works and details of the complaints process.

Applicant: NB By signing this form you are confirming you are a person whose signature is recognised by your company.

Signed: *P.Snyman*

Date: 30.05.2022

Print Name: Pieter Snyman

Position: Project Manager .

Note: This agreement shall be binding on, and ensure to the benefit of, the parties to this agreement and their respective personal representatives, successors and permitted assigns, and references to any party shall include that party's personal representatives, successors and permitted assigns.