

Construction Management Plan

pro forma

Lincoln House



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Revisions & additional material

Please list all iterations here:

| Date | Version | Produced by |
|--------------------|---|---------------------------------|
| 18th February 2022 | Draft for Internal Review | McLaren Construction Ltd |
| 25th February 2022 | Draft for Consultation | McLaren Construction Ltd |
| | Final for Submission Revised following receipt of consultation comments | McLaren Construction Ltd |
| | | |

Additional sheets

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

APPENDICES

| Date | Version | Produced by |
|--------------------|---|---------------------------------|
| 18th February 2022 | Draft for Internal Review | McLaren Construction Ltd |
| 25th February 2022 | Draft for Consultation | McLaren Construction Ltd |
| | Final for Submission Revised following receipt of consultation comments | McLaren Construction Ltd |

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.

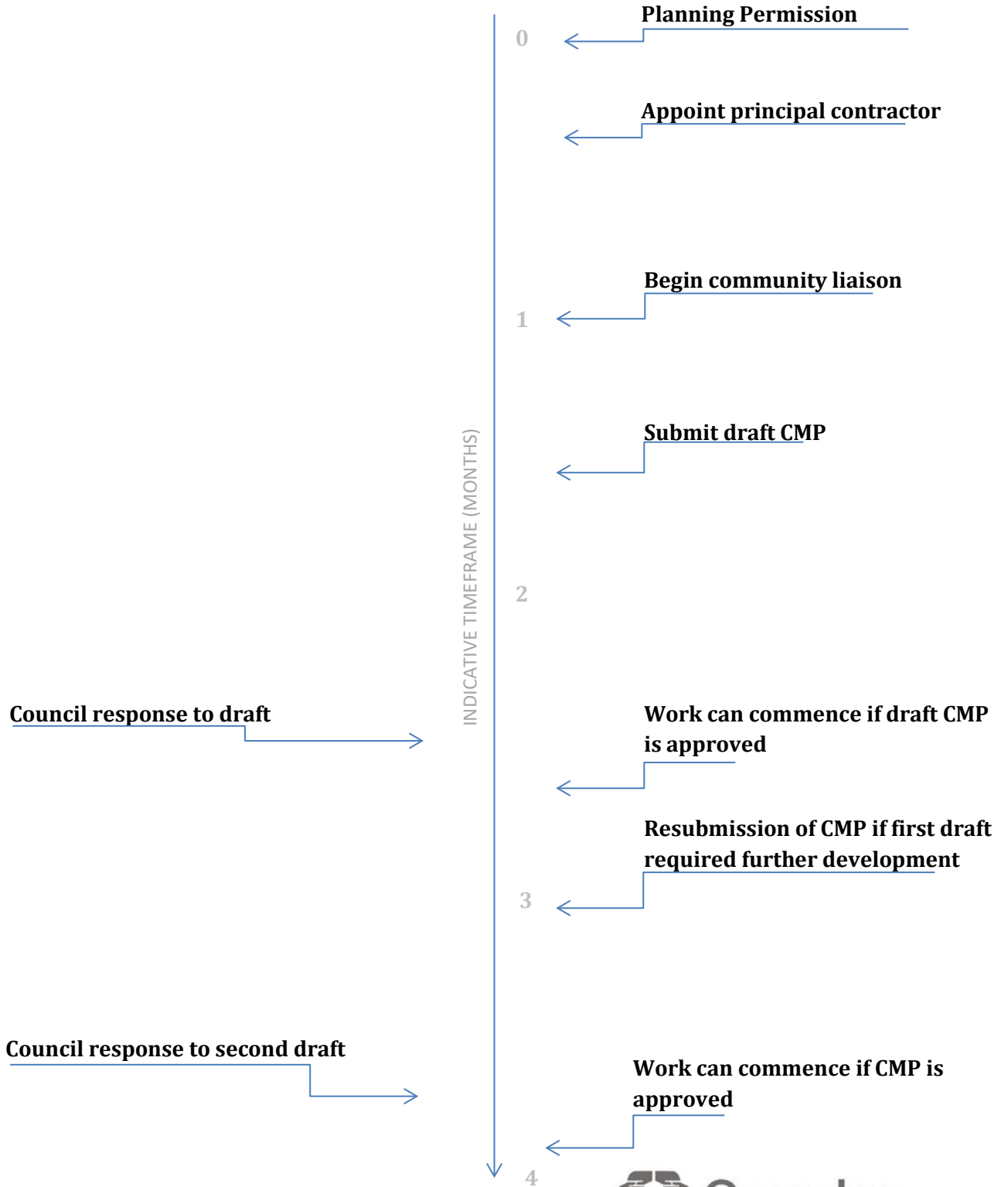
(Note the term 'vehicles' used in this document refers to all vehicles associated with the implementation of the development, e.g., demolition, site clearance, delivery of plant & materials, construction etc.)

Revisions to this document may take place periodically.

Timeframe

COUNCIL ACTIONS

DEVELOPER ACTIONS



Contact

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

Address: 296-302 High Holborn, London WC1V 7JH

Planning reference number to which the CMP applies: 2018/3105/P

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

Name: M Watkinson - McLaren Construction

Address: 10 Chiswell Street, London EC1Y 4UQ

Email: mark.watkinson@mclarengroup.com

Phone: 02070786963

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: M Fisher - McLaren Construction

Address: 10 Chiswell Street, London EC1Y 4UQ

Email: michael.fisher@mclarengroup.com

Phone: 02070786963

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: | M Fisher - McLaren Construction |
| Address: | 10 Chiswell Street, London EC1Y 4UQ |
| Email: | michael.fisher@mclarengroup.com |
| Phone: | 02070786963 |


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: | Blackburn & Co |
| Address: | No1 Clink St London SE1 9DG |
| Email: | Jon@blackburnltd.com |
| Phone: | 020 3002 9227 |

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.

Lincoln House - Site Location Plan

 Site Boundary Line

Lincoln House is located on the south side of High Holborn between Holborn tube station (Central & Piccadilly lines) and Chancery Lane tube station (Central line). Lincoln House, 296-302 High Holborn, London WC1V 7JH ('the Site'), is an eight-storey mixed use building (plus basement and ground) providing a total floor area of 5,660sqm GEA. Office accommodation is located at the upper floors and there are two shop-units at ground floor.

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).

Proposal:

Partial demolition and erection of extensions at rear, flank and roof level and rooftop plant. Associated external alterations to the retained elevations.

- The building will be substantially rebuilt with a new concrete core to the central area. The image below is viewed from the south at the rear, and displays the retained main façade elements overlooking High Holborn



- Logistics access is available from the front of the site along High Holborn only
- Bus Stops will need to be relocated to allow the installation of a vehicle delivery bay to provide logistics access
- There are party walls to the east and west boundaries. The west Boundary plot at 294-295 High Holborn is under development and work are anticipated to commence shortly
- Lincoln's Inn Fields are to the rear and will provide no access to the site

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).

A Gantt Chart is located in Appendix 8

| | |
|----------------------|---|
| 1. Demolition | 9 th January 2023 for 33 weeks |
| 2. Substructures | 13 th November 2023 for 16 weeks |
| 3. Superstructure | 26 th February 2024 for 21 weeks |
| 4. Envelope | 11 th June 2024 for 15 weeks |
| 5. Internal Finishes | 21 st June 2025 for 37 weeks |
| 6. External Works | 3 rd Jan 2025 for 12 weeks |
| 7. Commissioning | 3 rd Jan 2025 for 18 weeks |
| 8. Completion | 13 th May 2025 |

Overall duration from commencement of demolition to completion is 111 weeks

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

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

Our proposed site working hours will conform to the standard Camden working hours requirements as stated above

Community Liaison

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

This consultation must relate to construction impact 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.).

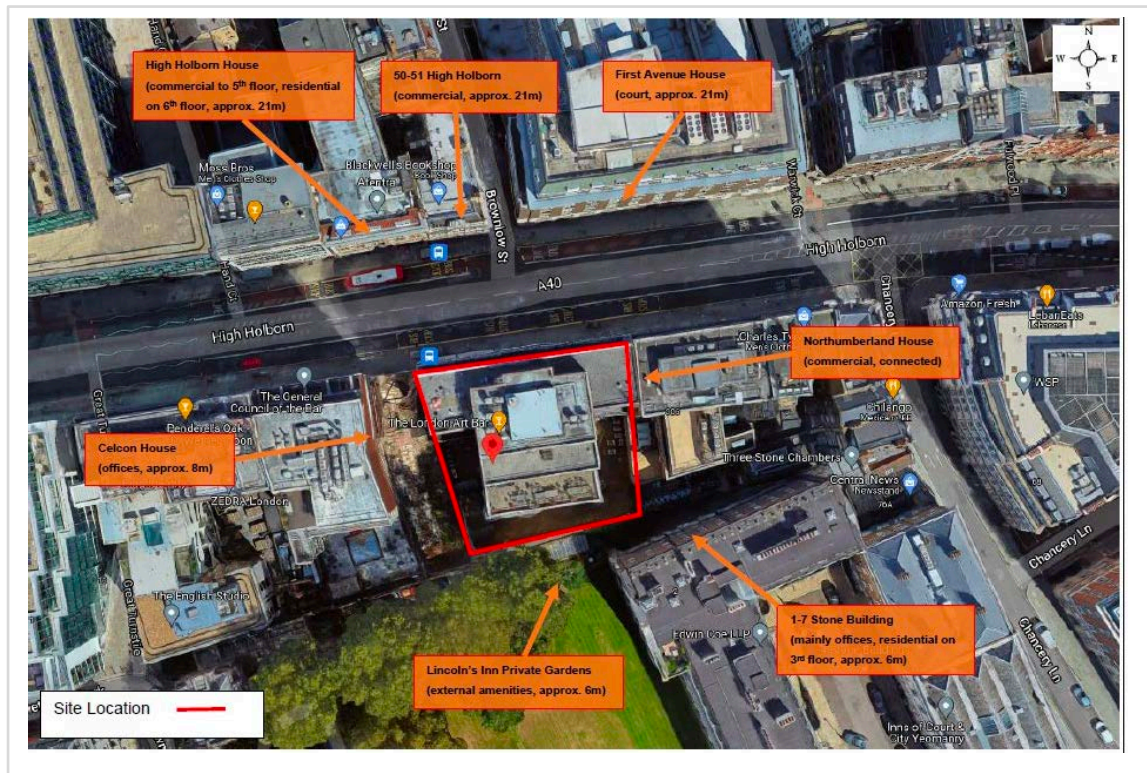
Neighbouring properties can be affected by the construction activities and so good management and communication will be promoted and maintained to assist in mitigating the adverse effects of the construction work. Properties adjacent to the Lincoln House building are likely to have direct sight of the works. Some properties will be adjacent to the demolition areas of the project at the rear.

These buildings contain a variety of functions; commercial, retail and residential. The needs of each function will be assessed to establish their particular concerns and requirements prior to works commencing.

The site is located within the Bloomsbury Conservation area, within a few metres of the Chancery Lane Conservation Zone, and the general arrangement is illustrated below.

There are no schools or hospitals in the immediate vicinity.

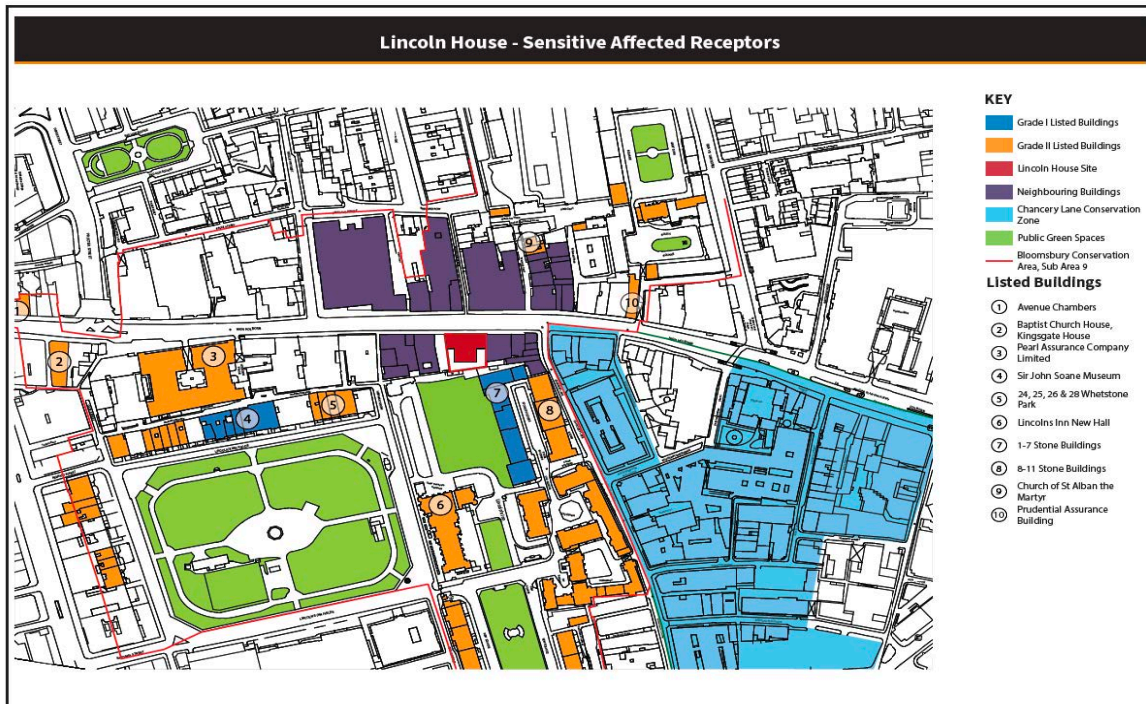
Hann Tucker – NDV Report 16th February 2022





The nearest receptors to each side of the site are summarised in the table below.

| Receptor | Name/Address | Use(s) | Description | Approximate Distance to Site |
|----------|--|-----------------------------------|---|---|
| North | First Avenue House, 42-49 High Holborn | Court Building | A 10-storey court building including ground floor level. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| | 50-51 High Holborn | Commercial Building | A 5-storey commercial building with retails on the ground floor and offices from 1 st to 4 th floors. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| | High Holborn House, 52-54 High Holborn | Commercial / Residential Building | A 7-storey mixed-use building with retails on the ground floor, offices from 1 st to 5 th floors and residential properties on the 6 th floor. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| West | Celcon House, 289-293 High Holborn | Office Building | A 9-storey office building including ground floor level. | The receptor is approximately 8m from the western edge of site. |
| East | Northumberland House, 303-306 High Holborn | Commercial Building | A 9-storey commercial building with retails on the ground floor and offices from 1 st to 8 th floor. | The receptor is connected (from ground floor to 8 th floor) to the eastern edge of site. |
| South | 1-7 Stone Buildings | Office / Residential Building | Grade I Listed Building. A 5-storey building with primarily office spaces and several residential properties on the 3 rd floor. | The receptor is approximately 6m from the southern edge of site. |
| | Lincoln's Inn Private Gardens | External Amenity Space | A public green space. | The receptor is approximately 6m from the southern edge of site. |



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.

Report to be attached following receipt of consultation responses together with any actions completed or proposed in response

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.

Should this be required, the Principal Contractor will run a Construction Working Group with other local construction projects listed. Details will be confirmed once the Principal Contractor has been appointed.

Please refer to Question 14

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.

The Principal Contractor will forward through the registration details once they have been appointed.

The Appointed Principal Contractor will be a member of the Considerate Contractor’s Scheme. The successful Contractor will provide the registration number once appointed. In accordance with the Considerate Contractors Scheme and section 1.3, table 1.1

(reproduced below) of the “Guide for Contractors Working In Camden”, the Principal Contractor will commit to working towards the standards outlined below.

Code of Considerate Contractors Standards:

| | |
|---|--|
| <p>1 Considerate Consider the needs of everyone who is affected by the construction process and of its effect on the environment. You must give special attention to the needs of people with sight, hearing, or mobility difficulties.</p> | <p>2 Environment: Be aware of the environment when choosing and using resources. You must pay particular attention managing waste, avoiding pollution, using local resources wherever possible, and keeping noise as low as possible.</p> |
| <p>3 Cleanliness: Keep the site, footpaths and surrounding area affected by the work clear of mud, spillage, litter, and any unnecessary rubbish. Make sure that the site, hoardings, scaffolds, and other features are kept in a clean, tidy, and safe condition.</p> | <p>4 Good Neighbour: Consult with neighbours about site activity from before the work starts to the final handover. Provide site information and viewing facilities where practical.</p> |
| <p>5 Respectful: Make sure that the site, hoardings, scaffolds, and other features are kept in a clean, tidy, and safe condition.</p> | <p>6 Safe: Make sure all construction work and vehicle movements are carried out with care for the safety of passers-by, neighbours, and site personnel.</p> |
| <p>7 Responsible: Be responsible for making sure everyone on site understands the scheme.</p> | <p>8 Accountable: Be accountable (responsible for your actions) to the public by providing site contact details and being available to deal with their concerns and develop good local relations.</p> |

14. Neighbouring sites

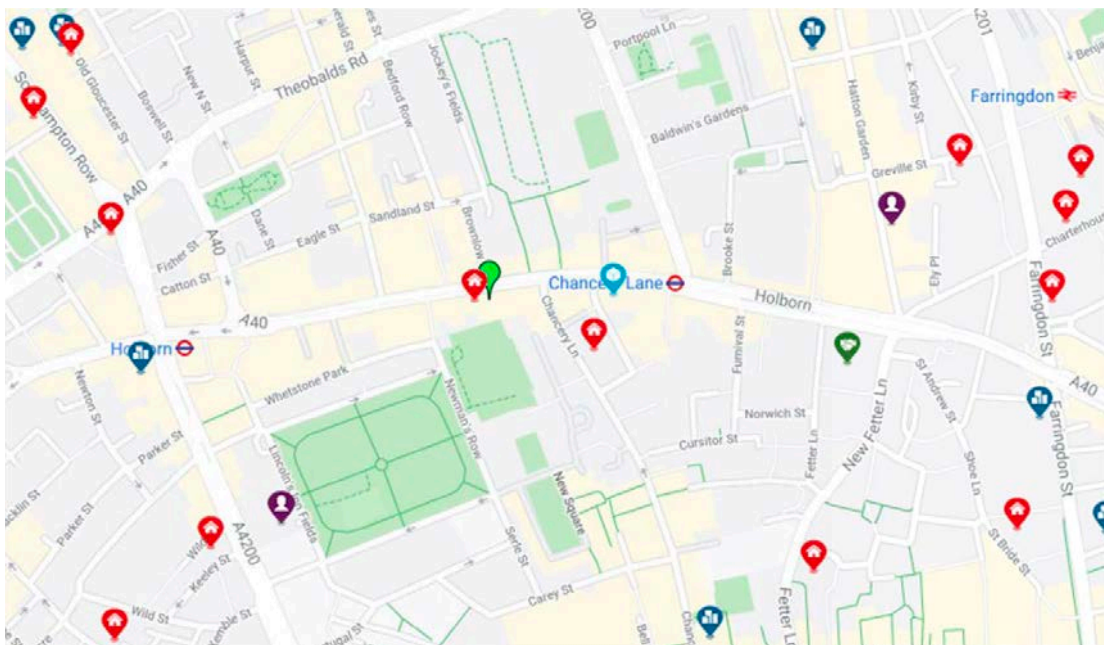
Please provide a plan of existing or anticipated construction sites in the local area and please state how your CMP takes into consideration and mitigates the cumulative impacts of construction in the vicinity of the site. The council can advise on this if necessary.

The Principal Contractor will liaise with other contractors completing work on local sites to enable them to prepare a schedule for delivery and waste removal vehicles. This schedule will take other local sites construction vehicle movements into consideration, and by adopting this approach, will help to reduce the cumulative impact of construction vehicle movements.

With regards to co-ordination and scheduling of construction traffic, contact with Camden Councils Highways Department will be maintained throughout the duration of the demolition and construction phase of the scheme to ensure compliance and to alleviate disturbance from construction traffic. The CMP will be updated as required to consider any existing, new or completed developments in the immediate vicinity.

The Map below will be updated regularly once on site.

Note 294-295 High Holborn is the vacant plot adjacent to Lincoln House on the west side. The development project here is likely to commence shortly in the Summer of 2022. This is likely to mean that a pitlane delivery area will be installed in front of 294-295 High Holborn prior to the pitlane and works at Lincoln House. Vehicle deliveries to the 2no sites will need close coordination and control.



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:

To be confirmed once appointed.

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

Wording to be confirmed once appointed

Principal Contractor - Demolition Enabling Works and Basement Construction

Contracts/Contractor's

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

Desktop checks

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

Site checks

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

Random spot checks will be carried out by site staff on vehicles and drivers servicing the site at a frequency based on the aforementioned risk scale.

These will include evidence of further training, license checks, evidence of routing information, and checks of vehicle safety equipment. Results from these checks will be logged, retained, and enforced upon accordingly.


Principal Contractor Main Works Phase

The Principal Contractor for the main works will continue to comply with the control methods outlined above and will:


- Continue to check vehicles entering site and to take the appropriate action under the contract and monitoring compliance.
- Detail the corrective action taken in the case of non-compliance.
- Desktop checks will be made against the FORS database of trained drivers and accredited companies as outlined in the CLOCS Standard Managing Supplier
- Comply with the CLOCS Managing Supplier Compliance guide.
- Checks of FORS ID numbers will form part of the periodic checks and will be carried out as per an appropriate risk scale.
- Random spot checks will be carried out by site staff on vehicles and drivers servicing the site.
- Spot Checks will monitor, evidence of further training, license checks, evidence of routing information, and checks of vehicle safety equipment. Results from these checks will be logged and supplier's will be checked against accredited operator's database: <https://www.fors-online.org.uk/cms/whos-on-board/>

Principal Contractor:

Typical site form below, which will be used as part of the CLOCS Monitoring Regime used by the Logistics Management company when appointed



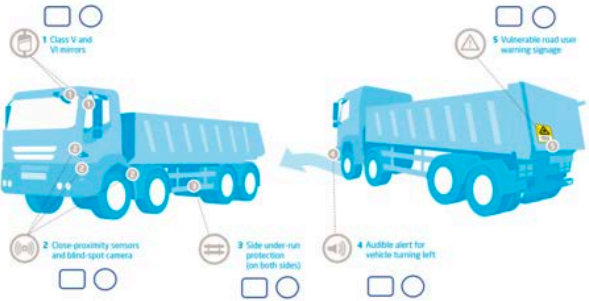
CLOCS Compliance Check



| | |
|-----------------------------|--------------------------------|
| Project-Name | Project-Number |
| Traffic-Marshall | Date, Time |
| Vehicle-Operator | Delivering-on-behalf-of |
| Vehicle-Registration | |

Vehicle-Check

FORS-Status Registered Bronze Silver Gold **FORS-ID:**



Please tick if fitted and if working

| |
|--|
| Comments |
| Driver-Check |
| Driver Confirms: Means of recording accidents <input type="checkbox"/> ✓ <input type="checkbox"/> X |
| In-date, valid licence <input type="checkbox"/> ✓ <input type="checkbox"/> X |
| VRU training <input type="checkbox"/> ✓ <input type="checkbox"/> X |
| Provided with traffic routing plan to site <input type="checkbox"/> ✓ <input type="checkbox"/> X |
| Briefing of site rules <input type="checkbox"/> ✓ <input type="checkbox"/> X |
| Driver Name: Signature: |

Action Taken

Allowed Access Refused Access

Document: HSM Form 25 - Version: 00
(Uncontrolled when printed)

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:

The Client, Aberdeen PLC has confirmed that the requirements are understood

This will be confirmed by the Principal Contractor once appointed

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, considering the need to avoid where possible any major cycle routes and trip generators such as schools, offices, stations, public buildings, museums etc.

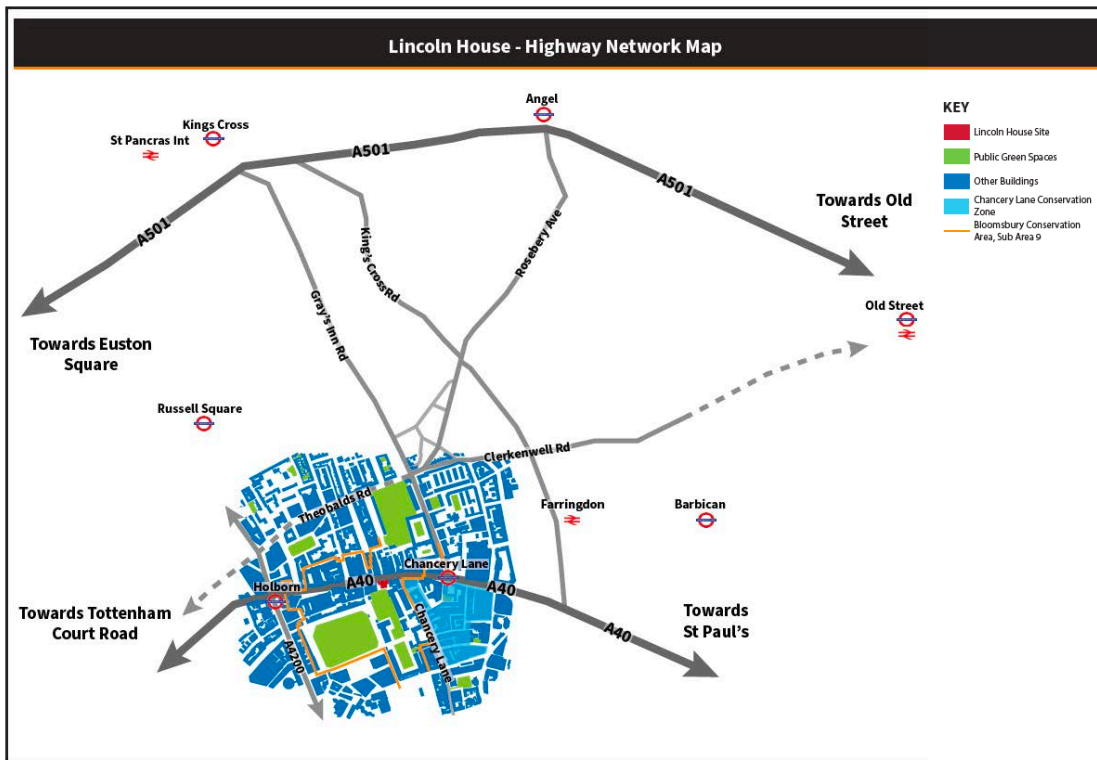
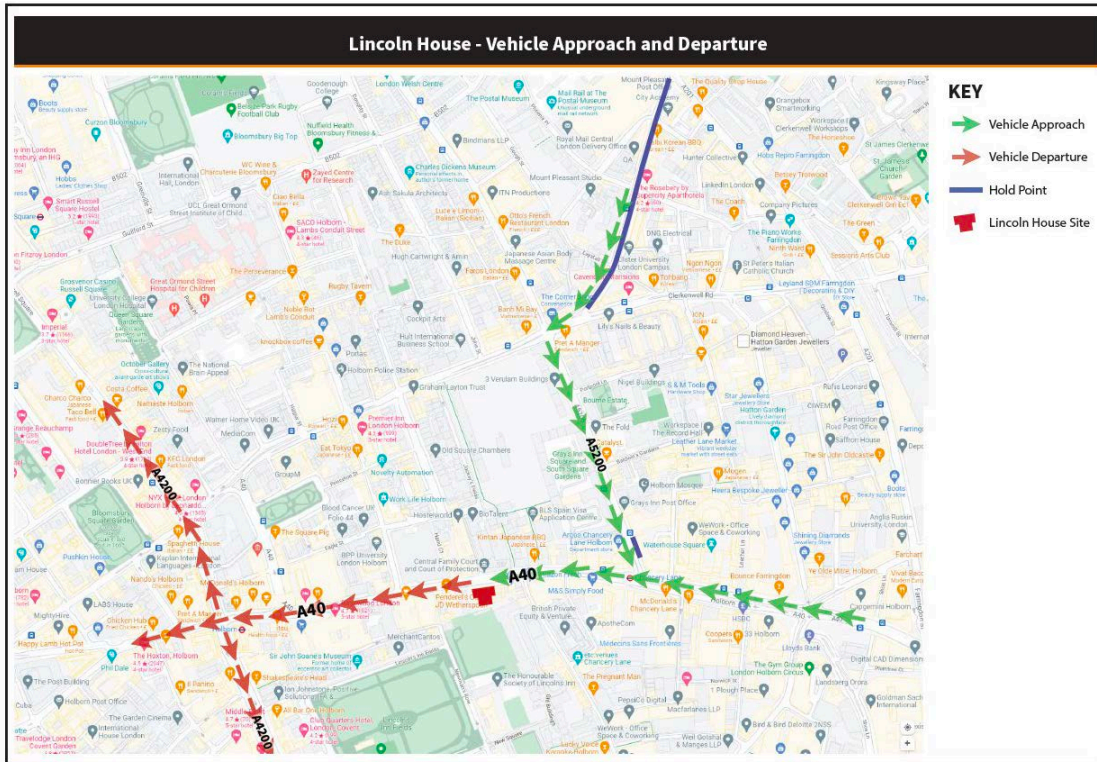
Consideration should also be given to weight restrictions, low bridges and cumulative impacts of construction (including neighbouring construction sites) on the public highway network. The route(s) to and from the site should be suitable for the size of vehicles that are to be used.

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.

Approach Plan

The approach plan will be provided to delivery personnel before they depart for site



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.

A Traffic Management Plan shall provide a full list of instructions and will be given to all supply chain members and applied to their delivery procedure. Compliance with the plan will be a contractual requirement for the appointed supply chain. The plan will provide clear instructions for the route to site, timing of deliveries, coordination with the site traffic marshals, contact numbers and what to do if things do not go according to plan.

Each contractor or supplier will confirm receipt of these documents and that the relevant drivers and personnel have been fully briefed.

- All vehicles will be booked into site at least 24 hours in advance to regulate the flow and avoid vehicle overlap
- Drivers will be required to contact site to ensure that their slot is available on approach
- Traffic Marshals will also contact the drivers should delay be anticipated and instruct them to wait in the holding area with a maximum of 3 at a time held there at any one time. **Refer to Question 19d**
- Once the delay has passed and the entrance cleared, the drivers will be contacted by mobile phone to come to site where the traffic marshals will be waiting for them
- Drivers waiting in the holding area will then approach the site entrance, as instructed by the Traffic Marshals.

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 Numbers are not expected at this early stage to exceed 30no per day.

| Vehicle Schedule The details below are representative of the anticipated types & frequency that can be expected at Lincoln House Development. | | |
|--|--|--|
| Construction Phase | Maximum Number of type of Vehicles per Day / trade | Number and Types of Construction Vehicles |
| Luffing Jib Erection / Dismantling | 1 | Mobile Crane |
| | 4 | Low Loader |
| Demolition | 1 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 20 | Tipper Vehicle: 8.04m (L) 2.5m (w) 3.2m (H) |
| | 1 | Small articulated vehicle: 10.7m (L) 2.36m (w) 3.6m (H) |
| | | 22 |
| Piling | 1 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 4 | Tipper Vehicle: 8.04m (L) 2.5m (w) 3.2m (H) |
| | 1 | Small articulated vehicle: 10.7m (L) 2.36m (w) 3.6m (H) |
| | 2 | Concrete Mixer: 8.73m (L) 2.55m (w) 4.03m (H) |
| | | 8 |
| Substructures | 8 | Tipper Vehicle: 8.04m (L) 2.5m (w) 3.2m (H) |
| | 2 | Articulated HGV : 16.6m (L) 2.5m (w) 3.4m (H) |
| | 1 | Heavy goods rigid flat bed: 10.0m (L) 2.5m (w) 3.65m (H) |
| | 13 | Concrete Mixer: 8.73m (L) 2.55m (w) 4.03m (H) |
| | | 24 |
| Slipform | 1 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 3 | Heavy goods rigid flat bed: 10.0m (L) 2.5m (w) 3.65m (H) |
| | 15 | Concrete Mixer: 8.73m (L) 2.55m (w) 4.03m (H) |
| | | 19 |
| Superstructure | 2 | Tipper Vehicle: 8.04m (L) 2.5m (w) 3.2m (H) |
| | 2 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 2 | Articulated HGV : 16.6m (L) 2.5m (w) 3.4m (H) |
| | 2 | Heavy goods rigid flat bed: 10.0m (L) 2.5m (w) 3.65m (H) |
| | 2 | 7.5 ton box van: 8.01m (L) 2.1m (w) 3.56m (H) |
| | 8 | Concrete Mixer: 8.73m (L) 2.55m (w) 4.03m (H) |
| | 2 | Skip Vehicle: 6.27m (L) 2.5m (w) 3.65m (H) |
| | | 20 |
| Internal Services & Finishes | 2 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 2 | Articulated HGV : 16.6m (L) 2.5m (w) 3.4m (H) |
| | 5 | 7.5 ton box van: 8.01m (L) 2.1m (w) 3.56m (H) |
| | 5 | 7.5t Panel Van: 7.2m (L) 2.19m (w) 2.54m (H) |
| | 5 | Heavy goods rigid flat bed: 10.0m (L) 2.5m (w) 3.65m (H) |
| | | 19 |
| External Works/ | 1 | Concrete Mixer: 8.73m (L) 2.55m (w) 4.03m (H) |
| | 1 | Low Loader: 16.6m (L) 2.5m (w) 3.4m (H) |
| | 2 | Articulated HGV : 16.6m (L) 2.5m (w) 3.4m (H) |
| | 3 | Tipper Vehicle: 8.04m (L) 2.5m (w) 3.2m (H) |
| | 0 | Small articulated vehicle: 10.7m (L) 2.36m (w) 3.6m (H) |
| | 2 | Skip Vehicle: 6.27m (L) 2.5m (w) 3.65m (H) |
| | | 9 |

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.

Please refer to Question 14 – Neighbouring Sites.

This will be updated nearer to the start on site date for demolition and will be actively updated on a regular basis.

Closest current active developments to Lincoln House are:

- 295/295 High Holborn is the adjacent property to the western boundary of Lincoln House. We anticipate that this will commence development in the spring of 2022 – to be confirmed
- McLaren Construction
Address 150 Holborn, London EC1N2NS, 240m east of the site
- The Office Group
Chancery House - Address Chancery House, 140m east-south-east of the site
53-64 Chancery Lane, London, London, WC2A 1QS

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

There are no constrained manoeuvres on the route to and from the site, except when entering the site, mainly during the demolition phase. These will be controlled manoeuvres, supervised by the Traffic Marshals.
Refer to Q20C for swept path

d. Consideration should be given to the location of any necessary holding areas and waiting points for sites that can only accommodate one vehicle at a time especially on 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. No Parking Bays will be suspended, but a Pit Lane will be installed, and a bus stop relocated.

Please refer to the Plan above at Q18A

We have been advised that Rosebery Avenue is suitable as a waiting point where drivers can be directed prior to being called to site.

All vehicles will approach the site having received a confirmation of their booking delivery slot. Each delivery driver will contact the site as they approach to confirm the delivery status. In the event of site problems that may affect the delivery, the traffic Marshal will contact the driver to direct them to the hold point, or defer their arrival to a different time, or cancel the delivery.

Please refer to Q18 above for further detail

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

A Logistics Plan will be designed and implemented to ensure that the cumulative impact of construction related traffic is managed and reduced as far as practicable. Storage and waste segregation areas on site are limited but can minimise vehicle movements for material where it can be retained and reused. Any material that is to be retained for future reinstatement into the works will be held on site where possible. The Principal Contractor will also investigate the use of appropriate material consolidation and holding areas, with Camden Town and Bow being nearest to the project (ref: Consolidation Directory 2016)

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 sub-contractors will be informed in writing that delivery vehicles engines are required to be switched off whilst attending site.
Fully qualified and experienced Traffic Marshals will be waiting to receive delivery vehicles to site. Once delivery vehicles are safely positioned, they will ensure that vehicle engines are switched off. Delivery drivers will stay with their vehicle whilst offloading takes place.
All sub-contractors will receive a copy of this CMP prior to attending site to ensure they are fully aware of all requirements. They will also comply with the relevant CLOCS/FORS requirements, and the Camden Guide for Construction Practice

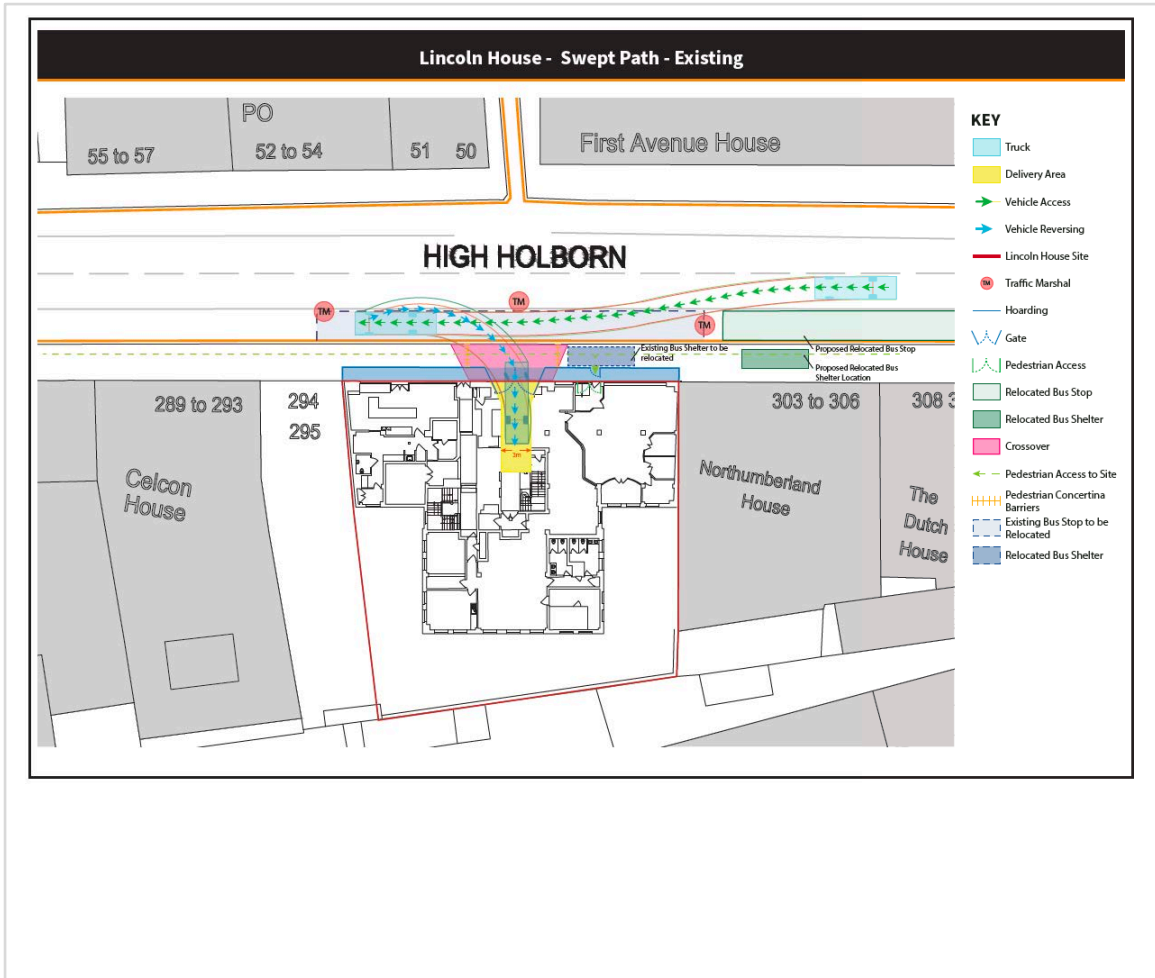
20. Site access and egress: *“Clients shall ensure that access to and egress from the site is appropriately managed, clearly marked, understood and clear of obstacles.” (P18, 3.4.3)*

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

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

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

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



b. Please describe how the access and egress arrangements for construction vehicles in and out of the site will be managed, including the number and location of traffic marshals where applicable. If this is shown in an attached drawing, use the following space to reference its location in the appendices. See detailed plan above Q20a

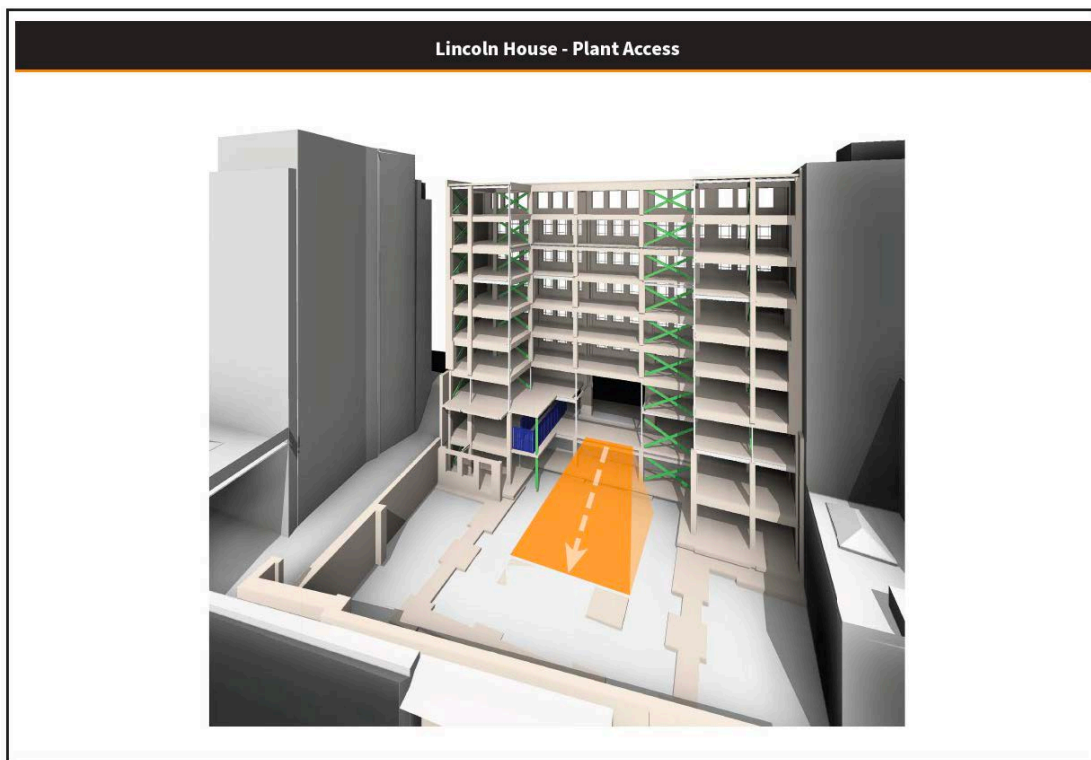
During the main demolition period there will be a minimum of 2no Traffic Marshals, and a third if required on occasion. Vehicles will reverse into the site and across the pavement. A new temporary crossover will be formed for the purpose. Pedestrians will be controlled using Concertina barriers where vehicles or materials may have to be taken across the pavement at ground level, and in-order to control pedestrians safely during this movement.



- All deliveries to the site will be carefully planned and controlled by Traffic Marshals both for arrival and departure
- No vehicle will enter or emerge from the site area unless under the strict control of the traffic Marshals
- The supply chain delivery operators will be members of the FORS and Clocs Schemes, with up-to-date cycle awareness safety training
- Clear segregation of the public, construction operatives and site vehicular traffic will be maintained.
- Access and egress points to the site will be kept closed when they are not being used. They will only be opened by a designated gateperson, remaining in attendance at the gate whilst they are open.
- Pedestrian access to the site will be located away from the materials off-loading area where possible

Material will be dropped into the vehicle waiting within the vehicle bay at ground floor. The Tower Crane will be installed during or just after the main demolition period. Demolition material from the lower ground floor levels can also then be loaded directly into vehicles parked on high Holborn in the delivery lane by the tower crane.

A temporary granular 6F2 ramp will be designed and installed by the Demolition Contractor to allow some plant and material access. This will be confirmed once the Principal Contractor has been appointed.



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.

See detailed plan above Q20a

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

Wheel Washing - Demolition

- A jet wash will be located on the ground floor internal (existing) hard-standing logistics area, and will be used as required
- It should be noted: that this area of hard standing will be maintained for as long as possible until new structures block access.
- As the existing area is hard standing, and will be kept damp by continuous water control, it is not anticipated that the jet wash will be used extensively.
- Where the jet wash is required, run off will flow back into the site and collected into settlement tanks prior to discharge under license, if and where required.

Traffic Marshals will constantly monitor vehicles and prevent debris from being deposited on the road surface. Attendant traffic marshals will ensure that vehicles leave the area in a suitable condition, and do not cause track out problems, deposit debris, mud, or other deleterious material on the road.

Road Sweeper Vehicle

McLaren will maintain the services of a visiting road sweeper and used routinely on a daily basis if needed during particularly high-risk periods as required.



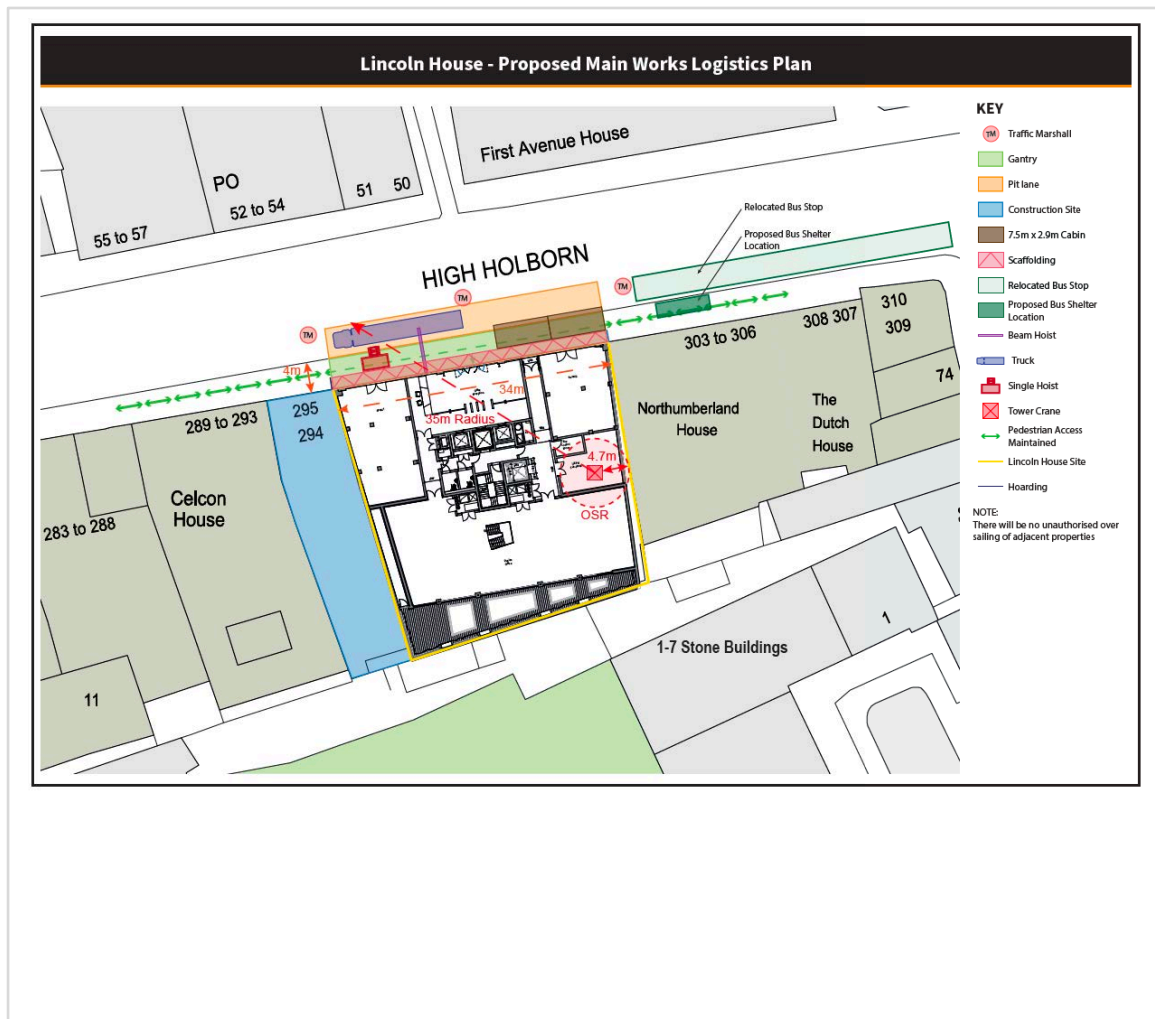
Airborne dust

Ensuring clean roads will mitigate the risk of Trackout and resultant airborne dust, generated during dry windy conditions. Paths and roads likely to be affected by the works will be monitored and maintained daily, or hourly as required and kept clean and damp as required.

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, and 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.



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.

Please refer to Q20b

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.

Please refer the responses to Questions 20a and Q21A above

23. Parking bay suspensions and temporary traffic orders

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

Please provide details of any proposed parking bay suspensions and/or TTO's which would be required to facilitate the construction - include details of the expected duration in months/weeks. Building materials and equipment must not cause obstructions on the highway as per your CCS obligations unless the requisite permissions are secured.

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

Parking Bays- Not applicable

A TTO will be required for the creation of a pit lane in front of the building and the relocation of the bus stop as shown above at Questions 21A and 20A.

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.

Gantry Installation on High Holborn

The Building is being partly demolished vertically and, transversely such that the façade will remain in place, but there will be virtually no space available for welfare accommodation or material unloading.

A steel Gantry will therefore be required for welfare cabins, (above the pavement at 5.5m). The cabins may marginally project out over the highway. The Gantry will also serve as pedestrian protection for the pavement below.

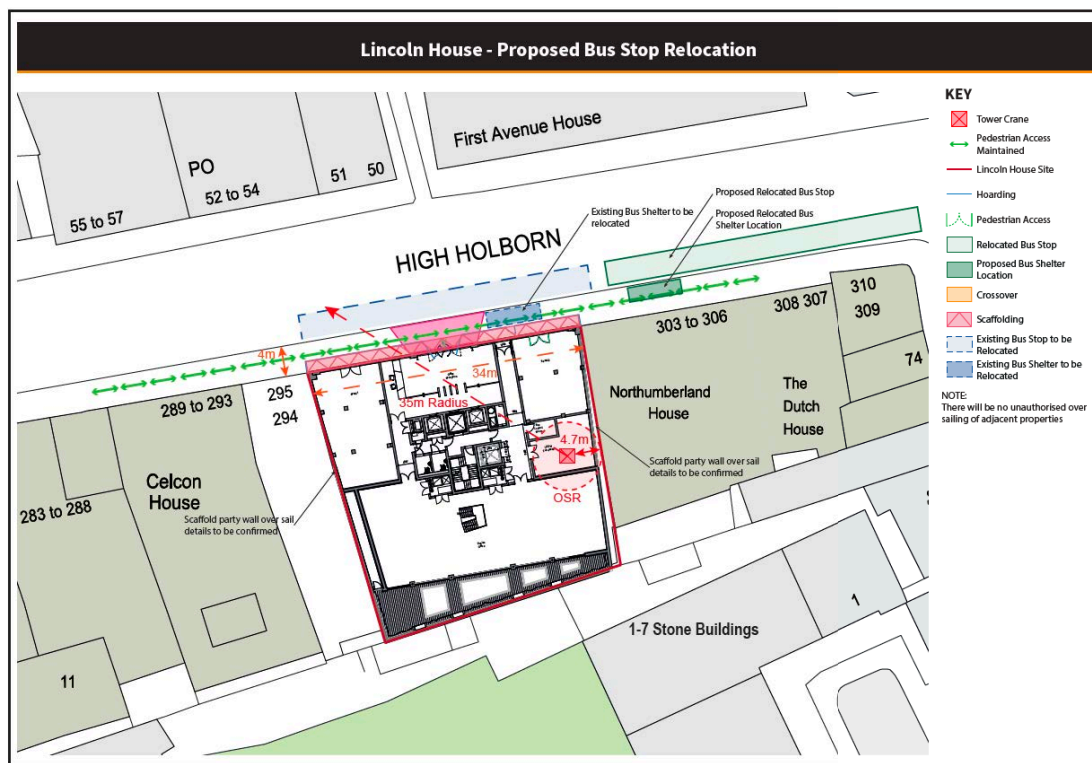
For the latter stages of the superstructure installation, a hoist will be needed. This will be installed above the gantry to allow material movement from delivery vehicles, up to the gantry, then via the hoist to the floors above.

The tower crane will also unload vehicles positioned in the delivery bay, but the usefulness of the crane diminishes for internal fitout as the superstructure completes and access becomes restricted.

Transport for London

We have exchanged communication with TfL regarding our proposals during January 2022. TfL are considering the implications of the initial draft proposals will respond with comments in due course. They have confirmed that the Bus Stop and Shelter has been relocated from the west end of the pavement in front of Lincoln House, to central area of Lincoln House following a request from the developer of 294/295 High Holborn in November 2021. This will require a further Relocation.

Bus Stop Relocation



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.

Please also refer to the responses to Questions 20a and Q21A above

25. Motor vehicle and/or cyclist diversions

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

Not Applicable

26. Scaffolding, hoarding, and associated pedestrian diversions

Pedestrian 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.

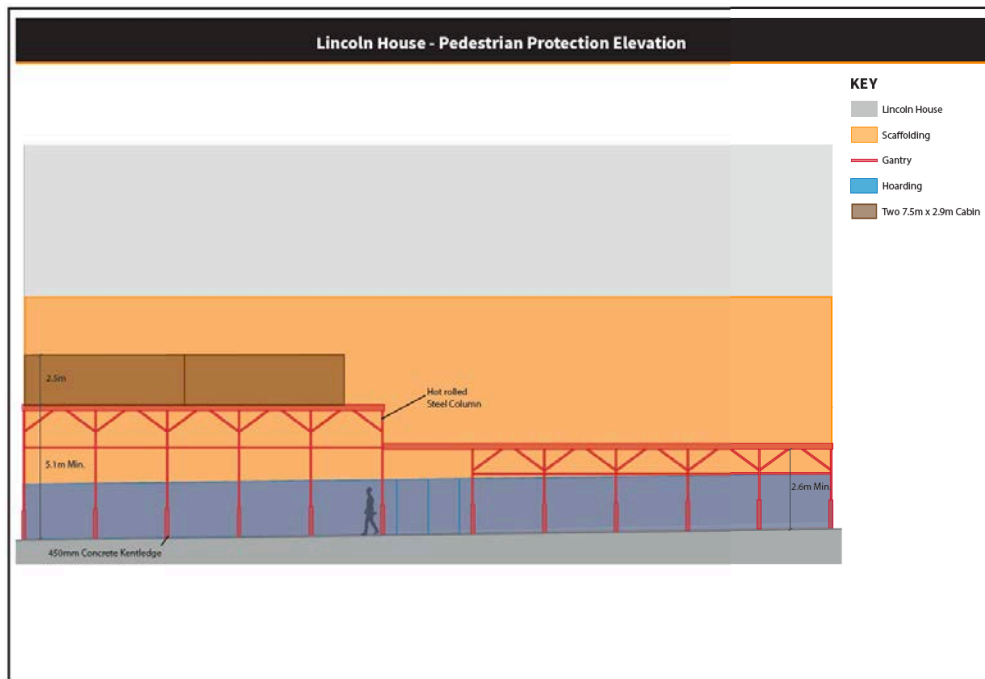
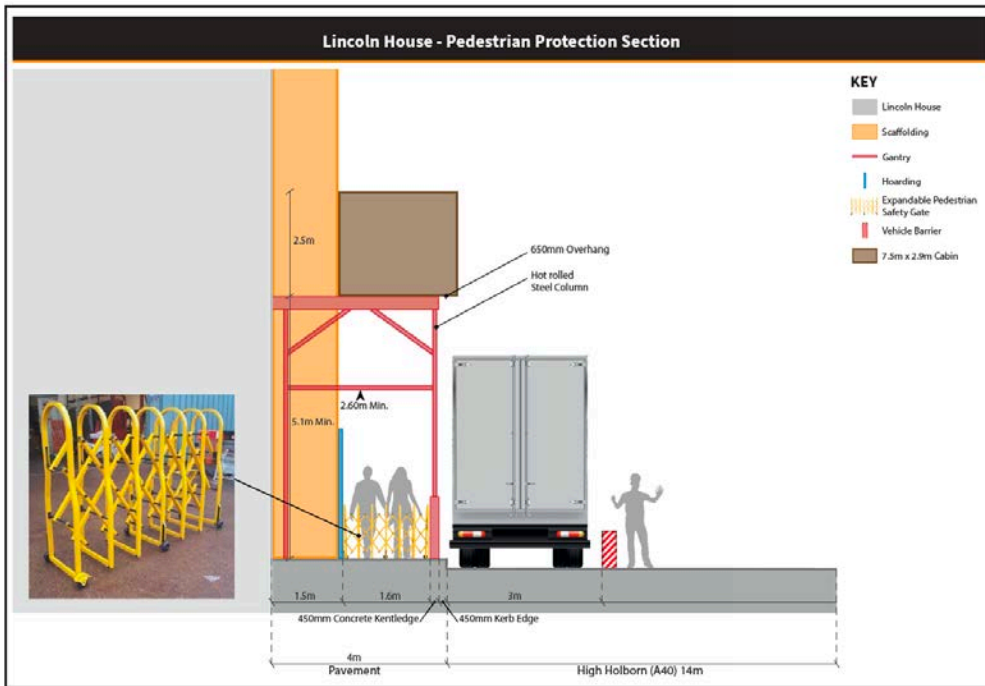
- a. Where applicable, please provide details of any hoarding and/or scaffolding that intrudes onto the public highway, describing how pedestrian safety will be maintained through the diversion, including any proposed alternative routes. Please provide detailed, scale drawings that show hoarding lines, 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.

No pedestrian diversions are intended. Please refer to Q20a and Q21a for layout plans. The intention is that all highway scaffolding and hoarding will comply with the current edition of the London Borough of Camden, "Guide for Contractors Working in Camden", however due to the need for a delivery pit lane, gantry and scaffolding, the remaining pavement width will be limited to 1.6m approximately, and this will be dependent upon the agreed, chosen design.

- Scaffold will project into the pavement by 1.5m from the face of the building
- A Fairfaced, painted hoarding will be installed to the face of the Scaffold using good quality ply sheets 2.44m high by 1.22m wide
- Steel Gantry Columns will be located behind the hoarding and within the scaffold zone
- Steel Gantry columns will stand on the outside of the pavement and set back from the Kerb 450mm
- A concrete base will act as Kentledge along the kerb side, 450mm back from the kerb
- The walkway width remaining for pedestrian access will not fall below 1.6m wide
- Directional signs will be placed where needed
- Pedestrians will be controlled by Traffic Marshals using concertina barriers when required
- Suitable lighting will be installed inside the walkway and utilised for night-time
- Traffic Marshals will ensure that there are no dangers likely to cause slips trips and falls to passing pedestrians
- See sectional elevation below

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.

- Welfare cabins will project over the Highway at 5.5m above the pavement and located on the Gantry. The cabin oversail will be limited to one half of the length of the gantry (15m). The remaining gantry area (20m) will be at a lower level, (a minimum of 2.6m above the pavement to the underside of the gantry), to allow material movement and the installation of a personnel/material hoist and beam hoist-See the elevation drawing below.
- TC1 will oversail the pavement and delivery bay in order to load and unload vehicles



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.

UKPN

We are in discussion with UKPN (ref 8500198534) regarding the existing 800 kva UKPN network substation which will be relocated on site during the works. An additional substation will be provided, dedicated solely to the building. 24hour access will be provided to UKPN during the construction works.

As Statutory utilities and subcontractors are appointed, a full, planning and coordination exercise will be completed for the services and associated groundworks trenches.

Other Utilities

Design for drainage, comms etc is being developed. Once the proposals are confirmed, we will liaise and develop the proposals further. We acknowledge the programme and cost benefits associated with a common logistics strategy and this will be our intention moving forward.

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.

- Demolition and structural alterations of 296-302 High Holborn, London WC1V 7JH
Creating structural openings through existing floors will be via saw cutting, Brokk breaker, 8t excavator with hammer attachment and associated removal of waste material into vehicles
- Hoarding, scaffold and gantry installation on High Holborn
- Installation of temporary works and propping - scope tbc
- Installation, use and dismantling of a tower crane using mobile crane in High Holborn
- Reduced level dig
- Installation of piling access ramp and mat
- Foundations and drainage works are to be confirmed using backactors and concrete pumps
- Construction of basement back to ground level
- Installation and use of 2tonne personnel/material hoist, gantry beam hoist and material movement
- Construction of concrete core using concrete pumps
- Construction of superstructure including steel frame installation, metal deck and concrete
- Construction of façade works to the rear elevations
- Scaffold all elevations
- Fit out works internally
- Works to remaining windows on the High Holborn elevation
- External works
- This list above will be further developed during the next phase as further methods are confirmed by appointment of the Principal Contractor and various subcontractors

The above listed items will take place Monday - Friday between 08:00 – 10:00. 12:00-14:00, 16:00-1800.

Noisy works will be carried out in accordance with the permitted working hours detailed in the table below. All noisy works will be managed in accordance with section 4 of the "Guide for Contractors Working in Camden".

| General Construction Works: | |
|---------------------------------|---------------|
| Monday - Friday | 08:00 – 18:00 |
| Saturday | 08:00 – 13:00 |
| Sunday | Not Permitted |
| Bank Holidays | Not Permitted |
| Noisy Works: | |
| Monday - Friday | 08:00 – 18:00 |
| Saturday | 08:00 – 13:00 |
| Sunday | Not Permitted |
| Bank Holidays | Not Permitted |
| Demolition, Piling & Earthworks | |
| Monday - Friday | 08:00 – 18:00 |
| Saturday | Not Permitted |
| Sunday | Not Permitted |
| Bank Holidays | Not Permitted |

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.

Please refer to Appendix 29 containing the Hoare Lea Report dated May 2018

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

Please refer to Appendix 38 Hann Tucker NDV Management Plan 220216

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.

NOISE AND VIBRATION

The Principal Contractor will control and limit noise and vibration levels, as far as is reasonably practicable, so that dwellings and other sensitive receptors are protected from excessive noise and vibration levels arising from construction activities.

Modern well-maintained machinery and tools will be used for all demolition works to minimise noise and vibration.

Noise, and Vibration monitors will be installed to alert staff when levels are approaching maximum levels. When an alert is received the works will cease and the situation/methods reviewed and adapted before continuing.

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

The Principal Contractor's NDV records, reports and strategy will be provided by fully accredited organisations once appointed and before work commences.

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

Measures for Mitigating Dust Nuisance

A Dust Management Plan will be produced prior to the start on site, detailing mitigation procedures. It is important that appropriate mitigation measures are applied to minimise dust emissions from the site, in accordance with the Mayor's SPG for Control of Dust and Emissions during Construction and Demolition and good practice.

General advice for all construction and removal work will include the following:

- Dust generated by the demolition and other very dusty construction processes will be suppressed via a fine directional spray-jet of water aimed at the source, and any material to be transported will be wetted down prior to transit.
- During the superstructure works, and prior to the façade installation, dusty floors will be damped down and maintained in a clean dust free state. Monarflex sheeting will assist in this regard by reducing wind-drying effects.
- Skips and powder containers to be covered when not in use
- Cutting equipment is to be used with a water suppressant and/or suitable extract system
- Vehicles transporting materials capable of generating dust to and from site will be suitably sheeted on each journey to prevent release of materials and particulate matter. The sheeting material will be maintained in good order, free from excessive rips and tears.
- Plant will be well maintained (with efficient dust suppression systems) and switched off when not in use.
- The stockpiling of dust generating materials on site will be minimised
- Wet brushing techniques will be used for cleaning
- Regular checks for visual observation of dust and soiling within 50m of site
- Soft strip inside the building before removal works (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Screening to be erected surrounding site boundaries where possible
- All employees are provided with an appropriate induction and on-going briefings regarding dust mitigation measures required from the works they are carrying out

Dust Monitoring

Dust management will be managed by actively monitoring in accordance with the Dust monitoring Plan, and provision of mitigating procedures that can prevent and remedy the effects of dust.

Monitoring will be carried out at constantly. Preventative and mitigating measures will be used which will increase in frequency during works of higher risk, where they are more likely to generate dust, e.g., demolition, site traffic and excavation works. Levels of dust will be actively managed and monitored.

Adjacent Pavements and roads will also be monitored daily, and remedial actions provided where required.

Responding to Complaints

In addition, it is the responsibility of the Site Manager to record, respond to and follow up all complaints regarding dust. An internet website will be generated to facilitate complaints and a noticeboard will provide all necessary contact information, in addition to liaison meetings with local residents and businesses.

Site Managers are responsible for ensuring that suitably qualified personnel are available to always respond to complaints.

The following actions will be carried out in the event of obvious high levels of observed dust.

- On site activities will be immediately inspected to identify and record likely sources.
- If on site sources are identified as obvious high levels of observed dust, the relevant activities will be halted until remedial measures can be implemented and/or increased in frequency (e.g., wetting down, road sweeping, sheeting up); and
- Once mitigation measures are implemented, site activities will continue whilst being observed to ensure that the mitigation has been effective. All the remedial measures applied should be registered by the Site Manager to be included in the report.

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.

Demolition

The vehicle bay entrance will have an attendant Jet washer to clean wheels and used when required for the duration of the substantial part of the demolition project. The entrance slab will be a hard standing after the creation of a crossover and the entrance formed. It will be dedicated to the demolition and enabling period and will be removed before commencement of the superstructure. Vehicles will enter by reversing in from High Holborn, be loaded with excavated material, and then cleaned if needed before departure.

Any run-off from the jet washers will flow back into the site and collected into settlement tanks prior to discharge under license.

A road sweeper vehicle will be called off as required. Road sweepers and Traffic Marshals will ensure that track-out has no adverse effects on the highway.

Lower Ground Floor Works Excavation

Once the ground floor slab has been demolished, material from the lower ground floor will need to be moved to vehicles waiting in High Holborn. This may be by Tower Crane or conveyor up to the Gantry, to be then dropped into the parked vehicle.

Main Works

Vehicles will not enter the site during the main works as the ground floor slab is being replaced. The risk of vehicle tracking, and associated highway nuisance dust is minimal.

Bins will be used to convey material from the floors to a waiting compactor vehicle.

Traffic Marshals

Traffic Marshals will constantly monitor vehicles and prevent debris from being deposited on the road surface. They will control the Road Sweeper Vehicle, visiting site regularly, and daily during particularly high-risk periods if required.

Any debris that does fall onto road or footpath will be immediately cleared by the attendant traffic marshal. We will ensure that vehicles leave site in a suitable condition, and do not deposit debris, mud, or other deleterious material on the road. Ensuring clean roads will also mitigate the risk of airborne dust, generated during dry windy conditions. Paths and roads likely to be affected by the works will be monitored and maintained daily, or hourly as required and kept clean.

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

Please refer to Appendix 38 Hann Tucker NDV Management Plan 220216

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

A risk Assessment has been completed by Hann Tucker Associates and can be found in: Appendix 36a Hann Tucker AQA

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

Confirmed
The GLA - Mitigation Measures Checklist can be found in:
Appendix 36a Mitigation Measures Checklist (Extracted from SPG APPENDIX 7)

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

Please refer to Appendix 38 Hann Tucker NDV Management Plan 220216

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).

All pest control will be carried out in accordance with section 7.3 of the “Guide for Contractors Working in Camden”.

A contract with a reputable pest control contractor will be placed and all recommended preventative measures will be carried out.

Any instances of rodent infestation or similar will be recorded and promptly actioned. All specialist contractor inspection reports will be made available to the Environmental Health Officer on request.

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

An R&D survey will be completed during Autumn 2023 (tbc) and once vacant possession is achieved, when it is safe to do so, prior to the start of the demolition works,

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.

We can confirm that the Principal Contractor will be a member of the Considerate Contractor’s Scheme. Documentation verifying this will be made available on site, and to Camden Council.

In accordance with the Considerate Contractors Scheme section 1.3, and table 1.1 (reproduced below) of the “Guide for Contractors Working In Camden”, the Principal Contractor commits to working towards the standards outlined in table 1.1. The conduct of all staff working in connection with this development will be measured against the standards detailed below. The site will be designed so that welfare facilities and smoking areas are in positions least likely to cause disruption to residents and businesses.

The expectations for standards of conduct will be reiterated during regular daily briefings and toolbox talks. This will be a contractual obligation for the appointed suppliers and subcontractors.

Notices will be clearly displayed around the site, to emphasise and reinforce appropriate behaviour.

Code of Conduct for Considerate Contractors

| | |
|---|--|
| <p>1 Considerate Consider the needs of everyone who is affected by the construction process and of its effect on the environment. You must give special attention to the needs of people with sight, hearing, or mobility difficulties.</p> | <p>2 Environment: Be aware of the environment when choosing and using resources. You must pay particular attention managing waste, avoiding pollution, using local resources wherever possible, and keeping noise as low as possible.</p> |
| <p>3 Cleanliness: Keep the site, footpaths and surrounding area affected by the work clear of mud, spillage, litter, and any unnecessary rubbish. Make sure that the site, hoardings, scaffolds, and other features are kept in a clean, tidy, and safe condition.</p> | <p>4 Good Neighbour: Consult with neighbours about site activity from before the work starts to the final handover. Provide site information and viewing facilities where practical.</p> |
| <p>5 Respectful: Make sure that the site, hoardings, scaffolds, and other features are kept in a clean, tidy, and safe condition.</p> | <p>6 Safe: Make sure all construction work and vehicle movements are carried out with care for the safety of passers-by, neighbours, and site personnel.</p> |
| <p>7 Responsible: Be responsible for making sure everyone on site understands the scheme.</p> | <p>8 Accountable: Be accountable (responsible for your actions) to the public by providing site contact details and being available to deal with their concerns and develop good local relations.</p> |

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

From 1st September 2015

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

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

From 1st September 2020

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

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

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

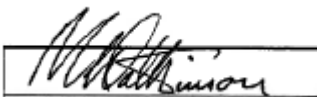
- a) Construction time period (mm/yy - mm/yy): **27/03/2023 to 12/05/2025**
- b) Is the development within the CAZ? (Y/N): **Yes**
- c) Will the NRMM with net power between 37kW and 560kW meet the standards outlined above? (Y/N): **Yes**
- d) Please provide evidence to demonstrate that all relevant machinery will be registered on the NRMM Register, including the site name under which it has been registered:
Confirmed
Project Lincoln House When Registration is complete
The Principal Contractor will be appointed, once selected, on this basis with a contractual requirement as part of their terms and conditions that they conform to the requirements of this CMP together with all other relevant documents. They will also be required to ensure that their subcontractors are appointed on the same basis.
- e) Please confirm that an inventory of all NRMM will be kept on site and that all machinery will be regularly serviced and service logs kept on site for inspection:
Confirmed
- f) Please confirm that records will be kept on site which details proof of emission limits, including legible photographs of individual engine plates for all equipment, and that this documentation will be made available to local authority officers as required:
Confirmed

◉ SYMBOL IS FOR INTERNAL USE

Agreement

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

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

Signed: 

Date: 25 February 2022

Print Name:M Watkinson

Position: Technical Delivery Director

Please submit to: planningobligations@camden.gov.uk

End of form.

Lincoln House Consultation CMP Appendices

Rev 220225

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APPENDIX 29

ACOUSTICS

REPORT

HOARE LEA

180328

May 2018

Hoare Lea

Noise Assessment



Maizelands Limited & Arringford Limited

Lincoln House, London
Report for planning
2018-03-28 Revision 03

ACOUSTICS





Audit sheet

| Rev. | Date | Description | Prepared | Verified |
|------|------------|----------------------------|----------|----------|
| 00 | 2017-02-10 | P1 | MF/BMD | AJP |
| 01 | 2017-11-23 | P2 – Updated plans | BMD | BJ |
| 02 | 2017-11-27 | P3 – Updated title | BMD | - |
| 03 | 2018-03-28 | P4 – Updated with comments | BMD | BJ |
| | | | | |
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This report has been prepared for Maizelands Limited & Arringford Limited only and expressly for the purposes set out in an appointment dated 12/10/2016 and we owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.



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Executive summary

Plans have been prepared to refurbish and extend the commercial office property at Lincoln House, London.

Baseline noise measurements have been taken to establish existing ambient noise levels at the proposed development site. These measurements have identified that the site currently experiences relatively high levels of noise during both daytime and night-time, with the main source of noise affecting the site being road traffic from High Holborn.

Based on the measured noise levels, comments have been made on the sound insulation of the building envelope with regard to appropriate internal noise levels within the proposed development.

Measured levels have also been used to set noise emissions limits to later inform the design of mechanical or electrical plant.

In addition, comments have been made on the sound insulation of the internal separating floors.

Consideration has been given to national and the local policies of London Borough of Camden and compliance with BREEAM credits has been discussed.

1. Introduction

Hoare Lea Acoustics have been appointed by Maizelands Limited & Arringford Limited to provide acoustic design consultancy for the proposed redevelopment of Lincoln House, on High Holborn, London.

This initial report provides information on noise control requirements that will need to be addressed in further developing the design and is intended to accompany the planning application.

A glossary of acoustic terminology is given in Appendix A.

2. Planning Requirements and Acoustic Design Standards

The performance standards that will drive the design include Local Authority planning policy, BREEAM 2014 requirements and well established guidance documents including:

- ▶ London Borough of Camden local policy
- ▶ National Planning Policy Framework (NPPF)
- ▶ National Planning Policy Guidance (NPPG)
- ▶ British Council for Offices (BCO) Guide to Fit-out 2014
- ▶ British Standard 8233:2014 'Sound insulation and noise reduction in buildings – Code of practice'
- ▶ British Standard 4142:2014 'Methods for assessing industrial and commercial sound'
- ▶ BREEAM 2014

2.1 London Borough of Camden requirements

London Borough of Camden's (LBC) noise policy is set out within Appendix 3 of the Local Plan 2017. The document explains that noise is considered in terms of various 'effect levels' which align with the National Planning Policy Framework (NPPF) and National Planning Policy Guidance (NPPG) documents:

- ▶ NOEL – No observed effect level
- ▶ LOAEL – Lowest observed effect level
- ▶ SOAEL – Significant observed adverse effect level

Assessment is made relative to the following context descriptors:

- ▶ Green – where noise is considered to be acceptable
- ▶ Amber – where noise is observed to have an adverse effect level, but may be acceptable when assessed in the context of other merits of the development
- ▶ Red – where noise is observed to have significant adverse effect

For new noise generating development, assessment should be made with reference to the methodology set out within BS 4142:2014. The following thresholds are set:

- ▶ LOAEL (Green): Noise 'Rating level' to be 10 dB below the existing background. An additional criteria applies at night that no events exceed 57 dB L_{Amax}

- ▶ LOAEL to SOAEL (Amber): Noise 'Rating level' to be between 9 dB below and 5 dB above background, or noise events between 57 dB and 88 dB L_{Amax} at night
- ▶ SOAEL (Red): Noise 'Rating level' is greater than 5 dB above background, and/or events exceed 88 dB L_{Amax} at night

2.2 British Council for Offices (BCO) requirements

BCO recommends that the sound level difference between separating office floors and walls should be at least $D_{nT,w}$ 45 dB at shell and core stage.

2.3 BREEAM requirements

It is understood BREEAM 'Excellent' is targeted for the scheme, where credits related to this report are Hea 05 and Pol 05.

2.3.1 Hea 05 requirements

The requirements for Hea 05 are split into a pre-requisite section and the awarding of up to three credits for achieving certain acoustic performance standards.

The first Hea 05 credit is awarded for achieving sound insulation performance in accordance with BS 8233:2014. This relates to standards of 'acoustic privacy' and is generally considered during the Cat B fit-out. With the exception of the new separating floor slabs, this is not included within this report.

The second Hea 05 credit pertains to internal noise levels throughout the development. In order to achieve the HEA 05 credit, BREEAM states that indoor ambient noise levels must comply with the "good practice" levels performance criteria set out in BS 8233. For Cat A only design, where it is not possible to define the exact nature of different spaces, Hea 05 Compliance Note 1 states that internal areas should be based on the most sensitive room type likely to be present, as a worst case.

The third credit under HEA 05 is awarded for achieving reverberation times compliant with Table 8 of BS 8233 in areas used for speech (not including meeting rooms). As the office is speculative in nature, the credit cannot be fully evaluated at this time but may be available as part of the Cat B fit-out.

2.3.2 Pol 05 requirements

Pol 05 pertains to noise pollution emitted from the development. Specific criteria require that the new development must not increase background noise levels at the façade of the nearest noise sensitive building, by more than +5 dB during the day (07:00-23:00) and +3 dB during the night (23:00 07:00). In this instance, the local authority criterion is the more stringent and will therefore be adopted.

2.4 British Standard 4142:2014 'Methods for assessing industrial and commercial sound'

Camden's Local Plan refers to BS 4142 as being the appropriate guidance for assessing commercial operations and fixed building services plant noise. This British Standard provides an objective method for rating the likelihood of complaint from industrial and commercial operations. It also describes means of determining noise levels from fixed plant installations and determining the background noise levels that prevail on a site.

The assessment of impacts is based on the subtraction of the measured background noise level from the rating level determined. The rating level is the source noise level (either measured or predicted) corrected for tone or character (if necessary). The difference is compared to the following criteria to evaluate the impact.

- ▶ A difference of around +10 dB or more is likely to be an indication of a significant adverse impact.
- ▶ A difference of around +5 dB indicates is likely to be an indication of an adverse impact.
- ▶ Where the rating level does not exceed the background noise level, this is an indication of the specific sound source having a low impact.

3. Site and Surroundings

3.1 Existing site

The existing site is an eight storey mixed use building (plus basement and ground) providing a total floor area of 5,660sqm GEA. Office accommodation is located at the upper floors and there are two shop-type units at ground floor, currently occupied by a bank and a café.

The Site is bounded by High Holborn to the north, Northumberland House (303-306 High Holborn) – an 9 storey office building to the east, and 294-295 High Holborn to the west - which is currently a vacant site, with no buildings or structures, awaiting redevelopment.

Surrounding properties are primarily mixed in nature with retail units populating most ground level units, or office reception areas, and the upper levels in office use. Larger residential communities are predominantly located to the north in Bloomsbury or to the south in Covent Garden.

The private gardens of Lincoln's Inn are located immediately to the south of the Site and Lincoln's Inn Fields, to the south-west of the Site.

3.2 Proposed works

The works to be undertaken as part of the redevelopment include refurbishment, remodelling and extensions at rear, flank and roof level to provide 2,193sqm (GIA) additional floorspace and rooftop plant. Change of use of ground floor Use Classes from A1, A2 and B1a uses to provide 2 x A1 units (204sqm GIA) and remainder in B1a Use. Associated external alterations to the elevations. Provision of appropriate cycle parking, waste/recycling storage, additional services and associated ancillary works

4. Acoustic Survey Results

An acoustic measurement survey was undertaken at the development site to determine sounds levels at the proposed extension façade locations and to establish background noise levels for existing conditions surrounding the site. Full details of the survey are given in Appendix B.

A fixed-term monitor was located on the site in a position deemed representative of lowest background noise level conditions at nearby properties. The fixed monitor location was chosen at the lowest roof level to the south of the building as shown in Figure 1.

Attended measurements were also conducted, at the ground level location indicated in Figure 1. The measurement positions were chosen to capture the variation in noise climate across the extension façade.

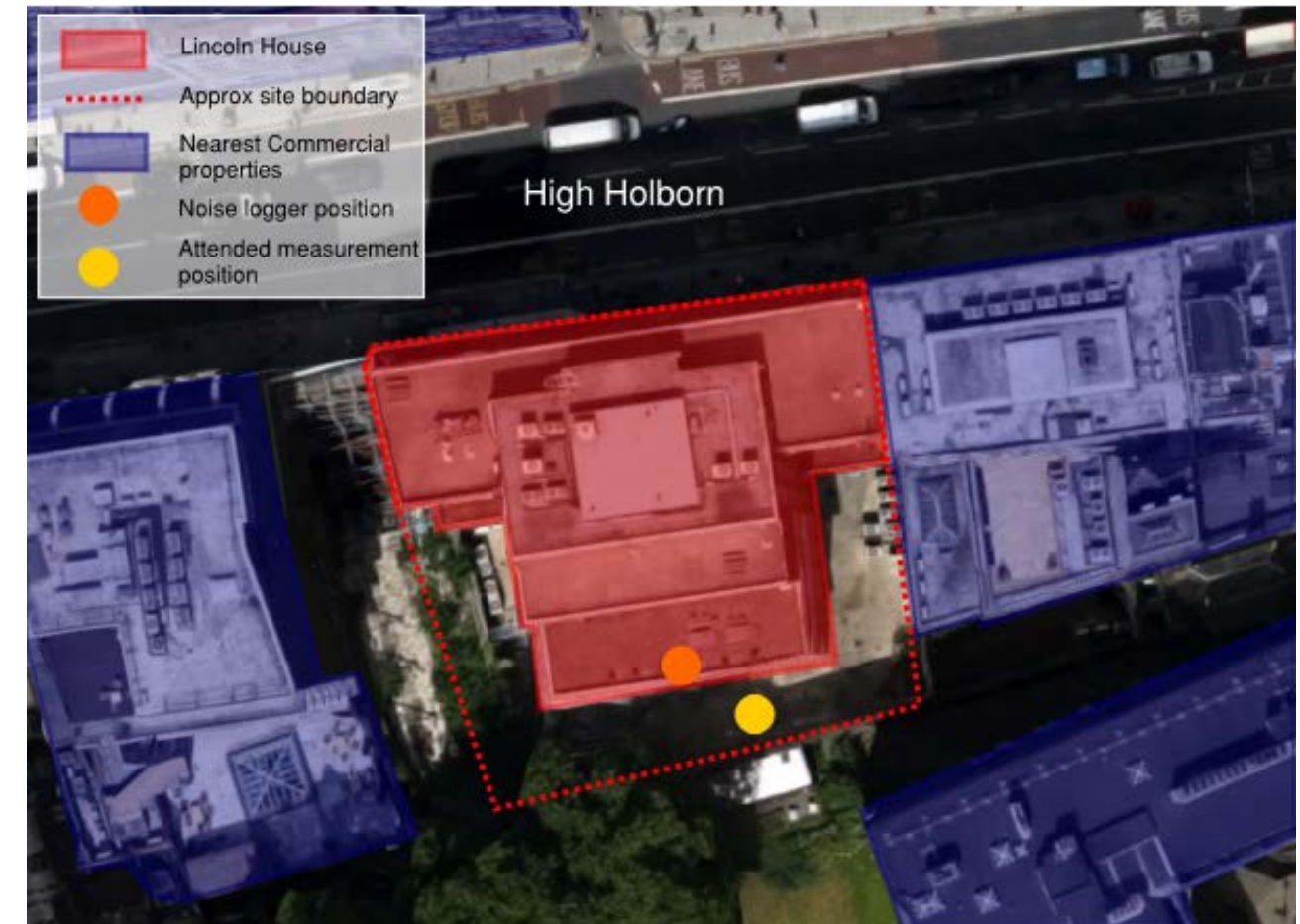


Figure 1: Site location plan showing noise measurement locations

The surrounding noise environment is dominated by road traffic noise from High Holborn. The south of the building is screened from road traffic noise.

Average day ambient noise levels at the fixed monitor position are circa 56 dB $L_{Aeq,T}$ with road traffic noise from High Holborn being the dominant sound source. At ground floor level, sound levels are between 55-56 dB $L_{Aeq,T}$ to the south of the site. Levels at this position were influenced by nearby existing plant units and surrounding road traffic noise.

Maximum noise events during the day time were governed by vehicle movements (including buses) on the surrounding roads and aircraft events and range between 71-80 dB L_{Amax} . It was also noted there was some influence from nearby construction noise. At ground level, these are in the lower region of 62-66dB L_{Amax} due to additional screening from the road.

Fixed-term monitor results show that between day time lowest background noise levels drop by 1-5 dB at the measurement position with lowest measured background results of 45 dB L_{A90} (daytime) and 44 dB L_{A90} (night time).

5. External Envelope Design

This section confirms the internal noise levels to be achieved for various room types and outlines acoustic design considerations for the building envelope.

The existing building at Lincoln House will be refurbished and extended to the rear with no amendment to the existing front facades. The following will therefore apply to the new build extension sections only.

5.1 Target internal noise levels

External noise will need to be reduced sufficiently to achieve suitable internal ambient noise levels in line with BREEAM 2014 Hea 05 requirements to achieve the second credit. The required internal noise level depends on the main function of a space and is set accordingly in line with relevant standards and guidance.

Table 1 provides internal noise level criteria to be achieved as part of the scheme for specific areas and includes noise contribution from both external noise intrusion and from building services. Maximum permissible noise levels from the operation of mechanical services as expressed in terms of Noise Rating ($L_{eq,1min}$) are given in section 6.1.1.

| Type of space | Internal noise levels, dB $L_{Aeq,T}$ |
|-------------------------------------|---------------------------------------|
| Speculative office/open plan office | 45 – 50 |
| Single occupancy office | 35 – 40 |
| Meeting room / Executive office | 35 |
| Corridor / Reception / Atria | 45 – 55 |
| Toilets | 50 - 55 |

Table 1: Internal noise level criteria to be achieved for typical room types. Criteria referenced from BS 8233:2014 as per BREEAM Hea 05 second credit requirements.

The above criteria are also in line with British Council for Offices (BCO) standards.

5.2 Façade sound insulation performance

The requirements for sound insulation of the building envelope are not onerous. To allow maximum flexibility with regards to any future Cat B fit-out, calculations have been undertaken on the basis of achieving internal noise levels of 35 dB $L_{Aeq,T}$, which is in line with BS 8233:2014 criteria for meeting rooms and single occupancy offices.

It is expected that noise could be reduced to the most onerous targets by using a relatively conventional external wall to achieve an overall façade performance of 38-40 dB R_w . The above sound reduction performances are expected to be achieved with a masonry type construction and relatively standard thermal double glazing.

5.3 Level 9 rooftop slab

It is understood that the Level 9 roof slab between the plant area and offices below will comprise a concrete construction of 400mm. The floor build up and suspended ceiling is expected to be sufficient acoustically to attenuate noise break-in via the floor structure itself from plant equipment including roof mounted Air Handling Units (AHUs).

A further review of noise intrusion levels from plant level slab is to be undertaken during later stages. A suspended ceiling is proposed to the underside of the roof slab and may be utilised for additional sound reduction performance where required to attenuate roof plant noise.

5.4 Ventilation Strategy

It is understood that supply and extract ventilation is provided to the office floorplates of the existing building via a combination of the main Air Handling Units (AHU) and openable windows. The AHU's are either to be located in the basement or on the roof. These will then be ducted to the downflow units in either a single or double risers depending on a split tenancy requirement.

Whilst mechanical ventilation and comfort cooling will be required to comply with the Client brief, the low energy design attributes of naturally ventilated buildings should be considered in the proposed baseline design.

Generally, openable windows allow users flexibility of use during the 7 or 8 months where outdoor air is a natural source of ventilation and temperature control, when outside noise levels permit. It can also increase occupant satisfaction by providing connectivity to the outside.

In addition to openable windows are central AHUs located at roof level and distributed down the building via central risers.

The reduction in noise level, from outside to inside, achieved through an open window is typically between 10 - 15 dB. Noise levels to the rear of the development, screened from High Holborn, are circa 56 dB $L_{Aeq,T}$. With openable windows, this would result in internal levels in the region of 41 – 46 dB $L_{Aeq,T}$. As you can see from Table 1, these internal levels would be suitable for an open plan or speculative office but would be above the recommended range for cellular offices and meeting rooms. As such, where windows are screened from High Holborn, openable windows may be an acceptable means of ventilation depending on the proposed use of the internal space.

Where windows overlook High Holborn, openable windows will not be an acceptable means of ventilation, due to the high levels of noise due to road traffic.

Noise from ventilation systems will need to be attenuated to maintain the required internal noise levels. Guidance on noise from M&E systems is provided in section 6.0.

5.5 Flanking sound insulation

It is important that mullions at potential fit-out partition lines provide sufficient sound insulation to maintain the performance of an internal wall. Where there are junctions with separating floors, transoms may also require treatment.

For BCO compliance, horizontal cladding mullions at potential fit-out partitions should be capable of achieving a flanking sound reduction performance of 45dB $D_{nf,w}$. This should be upgradable to 53dB $D_{nf,w}$ during the Cat B fit out.

Options to address the flanking at potential partition junctions could include:

- ▶ Over-cladding the mullions/transoms
- ▶ Infilling the mullions with acoustic pads

This detail should be developed further at a later design stage.

6. Internal Architectural Acoustics

6.1 Sound insulation of separating floor slab

6.1.1 Between offices

It is understood that the separating floor slabs between offices in the existing building comprise a concrete construction of 300mm. It is also understood that the floor slabs for the extension are still being developed, but a concrete construction of 300mm has also been assumed for these areas.

This floor build up and a suspended ceiling is expected to be sufficient to achieve the BCO requirement sound insulation performance of $D_{nT,w}$ 45 dB which is also considered by BREEAM.

6.1.2 Between office and retail

The separating floor slabs between office areas and the ground floor retail units is also understood to comprise a concrete construction of 300mm. This will provide a high level of sound reduction and should achieve a sufficient acoustic performance between these two areas.

7. Building Services Noise and Vibration Control

This section covers two aspects of building services, the effects of building services on the development itself and on the local environment.

It is proposed that plant is to be located at a roof level external plant space and at basement level.

Current proposals for roof level plant include the following equipment:

- ▶ 2 Air Handling Units;
- ▶ 2 Rooftop chillers
- ▶ Toilet extract fans;
- ▶ Future tenant's cooling plant

Additional mechanical plant proposed at basement level includes a generator and life safety plant, boilers, storage vessels, Low Temperature Hot Water and Boosted Cool Water pumps and cold water storage tanks.

Equipment specifics are likely to change during further design development and are only included here for indicative information on potential noise emission considerations.

7.1 Internal noise levels from building services

7.1.1 Criteria

The BCO guide states that building services noise should be controlled to meet the noise ratings (NR) shown in when measured under Cat A condition. While the design is for the Cat A fit out, and therefore there are no cellular offices, the criterion is provided in Table 2 for guidance.

| Room Type | Maximum building services noise |
|----------------------|---------------------------------|
| Cellular Office | NR35 |
| Speculative Office | NR38 |
| Executive Office | NR35 |
| Open plan office | NR38-40 |
| Corridor / Reception | NR40 |
| Toilets | NR40 |

Table 2: BCO Guide 2014 building services noise criteria

When converted to dB(A) values (by adding 6 dB to the NR values above), the levels in the above table correlate well with the levels stated in BS 8233, either falling at the lower or mid-level of the applicable ranges shown in Table 1.

Note that noise emissions in sensitive areas from plant located within the building and not directly in or serving those areas shall be controlled to NR15. This is based on the principle that whilst people will generally acknowledge and accept some level of noise from services equipment which they are gaining benefit, they will not generally wish to hear noise from neighbouring plant rooms. This criterion forces the need for such unwanted sources of noise to be reduced to well below the normal design standards for the space. To achieve the target consideration needs to be given to both the equipment specifications and the separating structure

7.1.2 Vibration from building services plant

Adequate vibration isolation will be provided to all systems such that there is no perceptible vibration from building services plant throughout the development. BCO criteria state that vibration should not exceed a peak acceleration of 0.01ms^{-2} with a W_b weighting. According to BS 6472-1:2008 Clause 3.3, this is in line with the threshold of perception for 25% of the population (i.e. 75% would not perceive vibration).

7.2 External noise emissions from building services noise

7.2.1 Location of nearby noise sensitive properties

Limits on noise emissions to atmosphere from the operation of mechanical services will apply at the nearest noise sensitive receptors.

While there are no existing residential properties in the vicinity of Lincoln House, it is understood that a proposed residential development on the land directly to the west of the site has been granted planning permission. As such this development is considered to be the nearest residential property to the scheme.

Other nearby existing noise sensitive properties have been identified at the following distances from the proposed redevelopment.

- ▶ The adjacent commercial property on High Holborn, identified as Northumberland House, a minimum of 5 metres from rear windows of the top floor. These are to be treated as noise sensitive properties.
- ▶ The adjacent commercial property at Stone Buildings, a minimum of 20 metres from the north façade windows. These are to be treated as noise sensitive properties.

7.2.2 Noise emission limits

Limits on noise emissions to atmosphere from the operation of mechanical services will be driven by two requirements:

- ▶ LBC’s planning requirements
- ▶ BREEAM Pol 05 requirements

7.2.3 Planning authority requirements

Recommended noise emission limits for new plant associated with the development are presented in Table 3. These limits have been derived based on the guidance provided by LBC’s Local Plan and BS 4142: 2014.

The proposed noise limits are 5 dB below the minimum measured background noise level and as such would be considered a ‘LOAEL to SOAEL’ within the context of LBC’s planning policy. The limits have been recommended with the intention that noise from new plant will not be noticeable by the neighbours and so avoid the risk of noise nuisance.

| Period | Minimum measured background noise level, $L_{A90,15min}$ (dB) | Plant noise rating level, $L_{Ar,T}$ (dB) |
|----------------------------|---|---|
| Daytime (07:00 – 23:00) | 45 | 40 |
| Night time (23:00 – 07:00) | 44 | 39 |

Table 3: Plant emission limits

The limits shall apply at the façade of the nearest existing noise sensitive buildings. As per LBC’s requirement, if plant noise is expected to create a perceptible hum, hiss or tone, the above noise limits will be subject to an appropriate character penalty.

7.2.4 BREEAM Pol 05

As noise sensitive areas have been identified in proximity of the development site, noise limits for fixed plant should be set in order to satisfy Pol 05 criterion. Any noise associated with the new development must not increase background noise levels at the façade of the nearest noise sensitive building, by more than +5 dB during the day (07:00-23:00) and +3 dB during the night (23:00 07:00).

Limits imposed by the local authority are more onerous than what is required under BREEAM Pol 05 and therefore where these are achieved the Pol 05 criterion will be satisfied.

7.3 External plant noise mitigation

Detailed advice for plant noise control will be provided once plant noise data is known. Provision is currently made within the current design proposals for louvered screening measures to external plant at roof level.

It is reasonable to expect that the above criteria could be readily achieved provided the following basic noise control measures are observed;

1. Low noise equipment (e.g. Air Handling Units, DX cooling condensers) will be selected where practically possible.
2. AHU’s to incorporate ducted splitter attenuators to fresh air intakes and exhaust ducts.
3. AHU enclosures to be sound insulated to limit fan noise breakout from casing.
4. Acoustic louvres to the ground level external plant area.
5. All equipment to be vibration isolated.

7.4 Future provision for emergency plant

Any M&E plant for emergency use shall be designed (for testing purposes only) to achieve 10 dB above the lowest measured background noise level. This is specified on the basis that plant will be tested during the day and infrequently only for short periods of time. The rating level for emergency plant at sensitive properties is shown in Table 4.

| Period | Measured background noise level dB (L_{A90}) | Emergency plant noise rating level at façade of nearest noise sensitive property ($L_{Ar,T}$) |
|--------|--|---|
| Day | 45dB | 55dB |

Table 4: Emergency plant noise emission limit

8. Construction Noise and Vibration Impact

It is understood that as part of the scheme the existing property at Lincoln House is to be extended. It will be necessary to consider the impact of these works on neighbouring properties.

Any neighbour has a common law right to seek redress in the courts for unacceptable levels of noise and vibration that are affecting their premises. Under The Control of Pollution Act 1974 (CoPA) and the Environmental Protection Act 1990 (EPA), the local authority can both control noise and vibration emission levels from construction activities using national legislation and act to prevent or to secure abatement of noise or vibration where it is deemed to be a statutory nuisance.

Construction noise and vibration is temporary and cannot be assessed in the same way as more permanent operational effects. BS 5228-1 indicates a number of factors that are likely to affect the acceptability of construction noise including site location, existing ambient noise levels, duration of site operations, hours of work, attitude of the site operator and noise characteristics of the work being undertaken.

Further review and assessment of the scope of construction activity will be required to ultimately feed into a construction management plan. This should aim to control and mitigate the negative impacts of noise and vibration from any construction activities or ground works to within acceptable bounds.

9. Summary and Conclusions

This report has covered acoustic advice for:

- ▶ Sound insulation of the building envelope
- ▶ Sound insulation of internal separating floors
- ▶ Compliance with BREEAM credits and Planning Authority Criteria
- ▶ Plant noise limits to atmosphere and allowance for noise mitigations

It is expected that through the specification of suitable sound control measures it will be possible to meet the requirements of the London Borough of Camden in terms of noise emissions from building services equipment and to provide adequate internal noise conditions for a commercial office environment via the sound insulation of the building envelope.

Appendix A – Glossary of acoustical terms used

Decibel (dB)

The decibel is the unit used to quantify sound pressure levels. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). Therefore, a logarithmic scale is used to describe sound pressure levels and also sound intensity and power levels. The logarithms are taken to base 10. Hence an increase of 10 dB in sound pressure level is equivalent to an increase by a factor of 10 in the sound pressure level (measured in Pascals). Subjectively, this increase would correspond to a doubling of the perceived loudness of sound.

Octave and Third Octave Bands

The human ear is sensitive to sound over a range of frequencies between approximately 20 Hz to 20 kHz and is generally more sensitive to medium and high frequencies than to low frequencies within the range. There are many methods of describing the frequency content of a noise. The most common methods split the frequency range into defined bands, in which the mid-frequency is used as the band descriptor and in the case of octave bands is double that of the band lower. For example two adjacent octave bands are 250 Hz and 500 Hz. Third octave bands provide a fine resolution by dividing each octave band into three bands. For example third octave bands would be 160 Hz, 250 Hz, 315 Hz for the same 250 Hz octave band.

A-Weighting

The 'A' weighting is a correction term applied to the frequency range in order to mimic the sensitivity of the human ear to noise. It is generally used to obtain an overall noise level from octave or third octave band frequencies. An 'A' weighted value would be written as dB(A).

L_{Amax}

The highest A-weighted noise level recorded during a measurement period.

L_{eq}

The L_{eq} is a parameter defined as the equivalent continuous sound pressure level. Over a defined time period 'T', it is the sound pressure level equivalent to the acoustic energy of the fluctuating sound signal. The $L_{eq,T}$ can be seen to be an "average" sound pressure level over a given time period (although it is not an arithmetic average). Typically the $L_{eq,T}$ will be an 'A' weighted noise level in dB(A). It is commonly used to describe all types of environmental noise sources.

L_{90}

The $L_{90,T}$ is a parameter defined as the sound pressure level exceeded for 90% of the measurement period 'T'. It is a statistical parameter and cannot be directly combined to other acoustic parameters. It is generally used to describe the prevailing background noise level or underlying noise level.

Noise rating (NR) curves

To measure the noise rating of a given environment, the sound pressure level is measured in octave or one-third octave bands. The number of the highest curve touched by the measured levels then gives the noise rating. For general broadband noise, the NR rating is typically 5 dB to 7 dB less than the sound pressure level as measured in dB(A).

Rating Level

The specific noise level of the source plus any adjustment for characteristic features of the noise.

Reverberation Time, T

The reverberation time is defined as the time taken for a noise level in an enclosed space to decay by 60 dB from a steady level, once the noise source has stopped. It is measured in seconds. Often a 60 dB decay cannot be measured so the reverberation time is measured over a lesser range and corrected back to the time for a 60 dB drop assuming a constant decay rate. Common parameters are T20 (time taken for a 20 dB decay multiplied by three) and T30 (time taken for a 30 dB decay multiplied by two).

Sound Reduction Index, 'R'

The difference measured between the amount of energy flowing towards the wall in the source room and the total amount of energy entering the receiving room (usual range 100 Hz - 3150 Hz). R varies with frequency and is measured in a laboratory in one-third octave bands.

Standardised Level Difference, D_{nT}

This is a measure of the level difference, corresponding to a reference value of the reverberation time in the receiving room. A correction term of ten times the common logarithm (to base 10) of the ratio of the actual reverberation time to the reference reverberation time is added to the level difference, D. For residential dwellings the reference reverberation time is 0.5s. The D_{nT} is measured in decibels. It is used as an airborne noise measurement parameter in sound insulation tests.

Standardised Impact Sound Pressure Level, L'_{nT}

This is a measure of the average noise level in a receiving room generated by use of a standard impact source on a separating floor reduced by a correction term corresponding to a reference value of the reverberation time. A correction of ten times the common logarithm (to base 10) of the ratio of the actual reverberation time to the reference reverberation time is subtracted from the received average noise level. For residential dwellings the reference reverberation time is 0.5s. The L'_{nT} is measured in decibels. It is used as an impact noise measurement parameter in sound insulation tests.

Impact Single Number Quantity Weighting

This is a weighting procedure defined in BS EN ISO 717, Part 2 for converting third octave band L'_{nT} values to a single number quantity denoted in $L'_{nT,w}$. It is a decibel value.

Airborne Single Number Quantity Weighting

This is a weighting procedure defined in BS EN ISO 717, Part 1 for converting third octave band R, R', D and D_{nT} values to a single number quantity denoted as R_w , R'_w , D_w or $D_{nT,w}$. It is a decibel value.

Spectrum Adaptation Term C_{tr}

This is a correction factor calculated from the measured R_w , R'_w , $D_{nT,w}$ and the corresponding third octave band R, R' and D_{nT} values. It uses a set of weighting levels in third octave bands derived from a road traffic noise spectrum. It is applied to airborne test results and is measured in dB.

Appendix B – Acoustic Survey Details

Noise measurements were conducted on site in order to establish prevailing external noise levels between Friday 30th September and Tuesday 4th September 2016. Fixed measurements were undertaken in a position deemed representative of surrounding properties background noise levels. Manual measurements were taken at a ground level location.

Equipment used for both the fixed and manual measurements is summarised in Table 5. Weather conditions during the manual measurements were observed to be majority dry during the fixed noise monitoring. All instruments were calibrated before and after measurements and no significant drift was observed.

| Monitor | Type | Manufacturer | Model | Serial No. | Calibration Expiry |
|------------|-------------------|--------------|-------|------------|--------------------|
| Fixed | SLM | Rion | NL-52 | 00832187 | 24/11/2017 |
| | Pre-amplifier | Rion | NH-25 | 32215 | 24/11/2017 |
| | Microphone | Rion | UC-59 | 05405 | 24/11/2017 |
| Manual | Sound Level Meter | Rion | NA-28 | 01260200 | 07/09/2017 |
| | Pre-amplifier | Rion | NH-23 | 60103 | 07/09/2017 |
| | Microphone | Rion | UC-59 | 280 | 07/09/2017 |
| Calibrator | | Rion | NC-74 | 34172704 | 04/07/2017 |

Table 5: Fixed and manual measurement equipment information

| No. | Date | Start Time | Elapsed Time (MM:SS) | L _{Aeq,T} dB | L _{A90} dB | L _{Amax} dB |
|-----|----------|------------|----------------------|-----------------------|---------------------|----------------------|
| 1 | 04/10/16 | 10:30 | 05:00 | 55 | 53.4 | 66.3 |
| 2 | 04/10/16 | 10:35 | 05:00 | 54.5 | 52.6 | 63.8 |
| 3 | 04/10/16 | 10:40 | 05:00 | 56.2 | 54.3 | 64.3 |
| 4 | 04/10/16 | 10:46 | 05:00 | 54.6 | 52.5 | 61.6 |
| 5 | 04/10/16 | 10:51 | 05:00 | 54.7 | 52.8 | 63.8 |
| 6 | 04/10/16 | 10:56 | 05:00 | 54.5 | 53.2 | 65.2 |

Table 6: Manual noise measurement results at positions indicated in Figure 1

Time history results from the fixed monitor position are shown in Figure 2 overleaf.

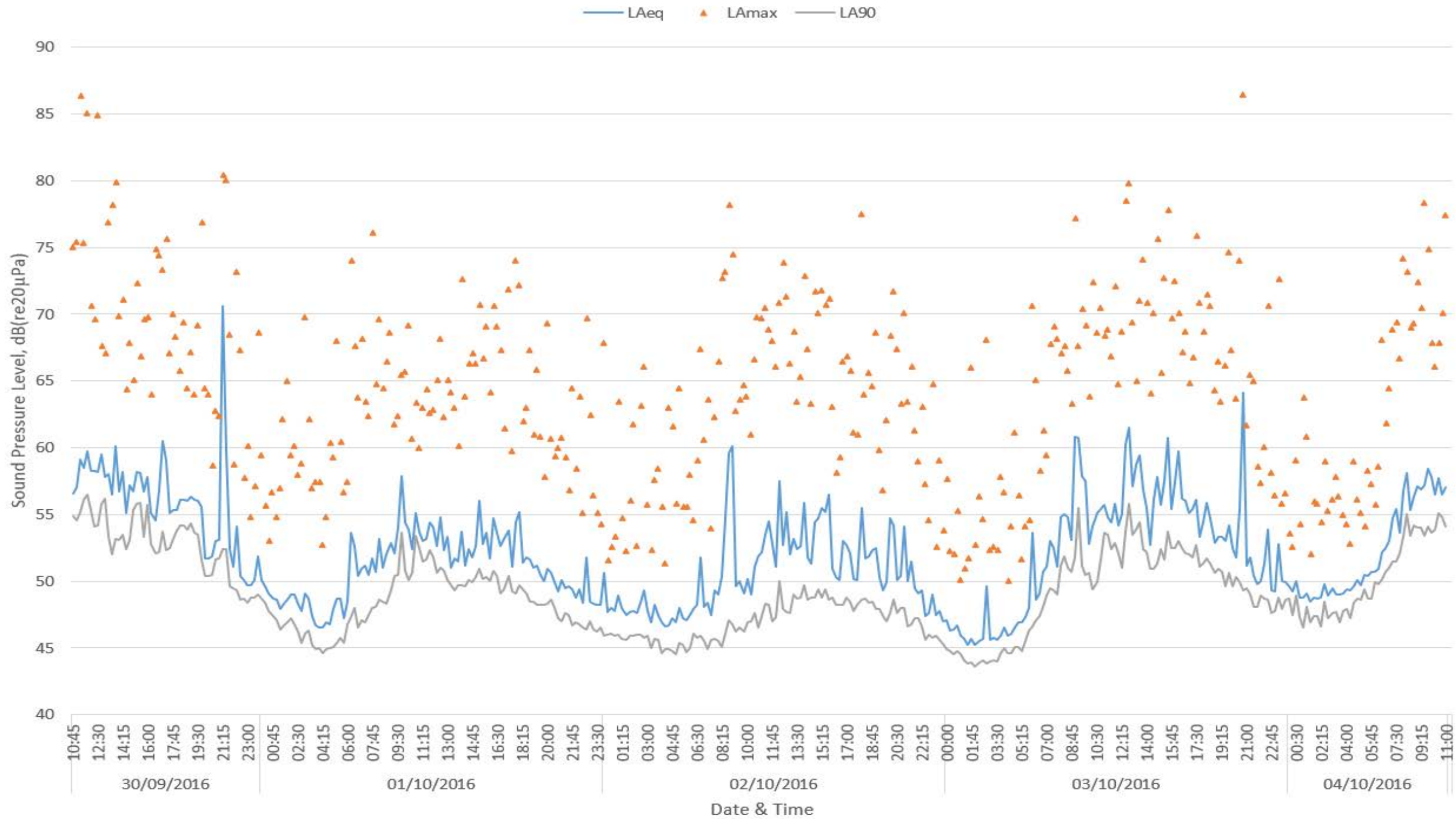


Figure 2 Results of the fixed noise monitoring measurements

APPENDIX 36A

HANN TUCKER

AQA 211130

Lincoln House, 292 High Holborn Camden Borough

Air Quality (Dust) Risk Assessment

29389/AQRA-1

30 November 2021

For:
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Air Quality (Dust) Risk Assessment 29389/AQRA-1

Document Control

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Air Quality (Dust) Risk Assessment 29389/AQRA-1

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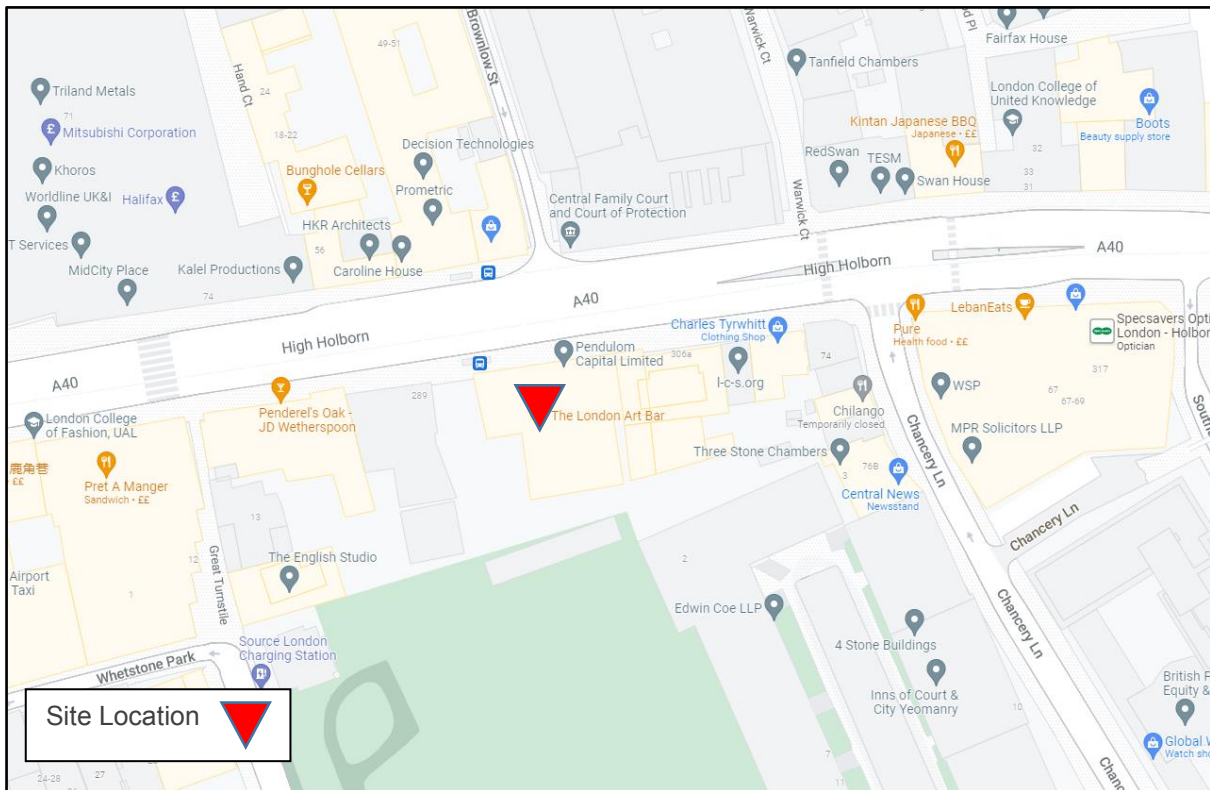
1.0 Introduction

Hann Tucker Associates have undertaken an Air Quality Risk Assessment (AQRA) in order to assess the potential for dust impacts during demolition, earthworks, construction and trackout associated with the Lincoln House development. The AQRA identifies the risk of potential dust emissions and recommends control measures required to minimise any significant effects. These control measures, when implemented, should help safeguard the health and well-being of local sensitive receptors.

The project involves partly demolishing the rear of the building in order to create a refurbished ten-storey contemporary office building.

1.1 Location

The site is located in Holborn, within the London Borough of Camden. See Location Map below.



Location Map (Map Data ©2021 Google)



1.2 Site Description

The current structure at Lincoln House comprises of a 10-storey building, including a basement area. The site is approximately 33m long and 30m wide.

The site is situated approximately 200m West of Chancery Lane underground station and is bounded to the North by High Holborn Road (A40).

The surrounding area contains a mixture of building type including residential properties, restaurants, shops, and office space. See Site Plan below.



Location Map (Map Data ©2021 Google)



1.3 Report Format

This AQRA has been undertaken in order to assess the magnitude and significance of dust impacts during demolition, earthworks, construction and trackout associated with the proposed development. Additionally, the AQRA will identify any likely dust emission and control measures required to minimise any identified significant effects and help safeguard the health and well-being of local sensitive receptors.

The AQRA is divided up into the following sections:

Section 2 – Assessment Methodology;

Section 3 – Risk Assessment;

Section 4 – Mitigation Measures; and

Section 5 – Significant Effects and Conclusion

2.0 Assessment Methodology

The IAQM Guidance provides a five-step procedure to assess the potential impacts of construction dust. This procedure includes a pre-mitigation assessment, recommended mitigation measures specific to the risk and, finally, assesses the likely post-mitigation impacts.

2.1 Guidance & Legislation

Guidance on how to assess and mitigate the impacts of dust emissions from demolition/construction sites has been published by The Institute of Air Quality Management (IAQM) in their 'Guidance on The Assessment of Dust from Demolition and Construction' in February 2014; This was substantially updated in June 2016 (v1.1). The Greater London Authority's (GLA's) Supplementary Planning Guidance 'The Control of Dust and Emissions During Construction and Demolition', also published in 2014, broadly follows this guidance and provides details for dust risk assessments.

2.1.1 Assessment Procedure

The assessment procedure is in accordance with the following framework:

- Screen the requirement for a more detailed assessment;
- Assess the risk of dust impacts of the four phases of construction (demolition, earthworks, construction and trackout), taking into account:
 - the scale and nature of the works, which determines the potential Dust Emission



- Magnitude; and
- the sensitivity of the area.
- Determine the site-specific mitigation for the potential activities;
- Examine the residual effects and determine whether or not these are significant; and
- Prepare the Construction Dust Assessment.

2.1.2 Screening Criteria

This step is deliberately chosen to be conservative, and will require assessments for most schemes. An assessment will normally be required where there is:

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

There are a number of 'human receptors' within 350m of the site boundary, including residential properties. Step 1, therefore, suggests a dust assessment is required.

2.2 Assessment of the Risk of Dust Impacts

The construction activities associated with the proposed development have been separated into the following four stages:

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



The assessment of the risk of dust impacts has been completed in two stages:

- Determine the potential dust emission magnitude; and
- Determine the sensitivity of the area to dust impacts.

2.2.1 Assessment of the Potential Dust Emission Magnitude

The potential dust emission magnitude for all four of the construction stages have been determined to be either Small, Medium or Large according to the criteria presented in the table below.

| Construction Activity | Dust Emission Magnitude Scale | | |
|---|---|--|---|
| | Small | Medium | Large |
| Site Clearance/ Demolition | Total building volume <20,000m ³ , construction material with low potential for dust release, demolition activities <10m above ground, works during wetter months. | Total building volume 20,000-50,000m ³ , potentially dusty construction material, demolition activities 10- 20m above ground level. | Total building volume >50,000m ³ , potentially dusty material, on-site crushing and screening, activities >20m above ground level. |
| Earthworks | Total site area <2,500m ² , soil type with large grain size, <5 heavy earth moving vehicles active at one time, bunds <4m high, total material moved <20,000t, works during wetter months. | Total site area 2,500-10,000m ² , moderately dusty soil type, 5-10 heavy earth moving vehicles active at one time, bunds 4-8m high, total material moved 20,000-100,000t. | Total site area >10,000m ² , potentially dusty soil type >10 heavy earth moving vehicles active at one time, bunds >8m high, total material moved >100,000t. |
| Construction | Total building volume <25,000m ³ , construction material with low potential for dust release. | Total building volume 25,000-100,000m ³ , potentially dusty construction material, on site concrete batching. | Total building volume >100,000m ³ , on site concrete batching, sandblasting. |
| Trackout | <10 HDV* outwards movements in any one day, surface material with low potential for dust release, unpaved road length <50m. | 10-50 HDV outward movements in any one day, moderately dusty surface material, unpaved road length 50-100m. | >50 HDV outward movements in any one day, potentially dusty surface material, unpaved road length >100m. |
| *HDV – Heavy duty vehicle (>3.5t) Note: In each case not all of the criteria need to be met and other criteria may be used if justified. | | | |

The complete assessment of dust emission magnitude is shown below.

| Construction Activity | Dust Emission Magnitude | Justification |
|-----------------------|-------------------------|--|
| Demolition | Small | Total building volume <20,000m ³ |
| Earthworks | Small | Estimated site area <2,500m ² |
| Construction | Medium | Estimated total building volume 25,000-100,000m ³ |
| Trackout | Medium | Estimated 10-50 HDV outward movements in any one day |

Owing to the scale of the proposed development, the magnitude of dust emissions has been assessed as small for demolition and earthworks, and medium for construction and trackout activities.



2.3 Sensitivity of the Local Area

In order to assess the sensitivity of the local area, the following table has been used.

| Sensitivity of Area | Human Receptors | Ecological Receptors |
|---------------------|--|--|
| High | People would be present continuously, 10-100 dwellings within 20m of the site, exposed over a time period relevant to the air quality objective for PM10, very sensitive receptors (e.g. residential properties, hospitals, schools, care homes) | International or national designation, locations where there is a community of a particularly dust sensitive species (e.g. Special Area of Conservation SAC) |
| Medium | People would not be expected to be present here continuously for extended periods, locations where people exposed are workers and exposure is over a time period relevant to the air quality objective for PM10, 1-10 dwellings within 20m of the site, medium sensitive receptors (e.g. parks, place of work-office and shop workers) | Locations where there is particularly important plant species, national designation where the features may be affected by dust deposition (e.g. Sites of Special Scientific Interest SSSI) |
| Low | People would be expected to be present only for limited periods, human exposure is transient. | Locations with a local designation where the features may be affected by dust deposition (e.g. Local Nature Reserve) |

IAQM Factors for Defining the Sensitivity of an Area

In addition, the Defra mapping tool for the latest available data (2021) has been used to establish the estimated background concentration PM10 levels within the London Borough of Camden. The averaged PM10 background concentrations for 2021 were found to be 19.26µg/m3.

The sensitivity of the area has been assessed in relation to a number of factors including the specific sensitivities of receptors in the area, the proximity and number of those receptors and in the case of PM10, the local background concentration. The sensitivity has been established by following the significance criteria in the tables below.

| Receptor Sensitivity | Number of Receptors | 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 | Medium | Low | Low | Low |
| Low | >1 | Low | Low | Low | Low |

Sensitivity of the area to dust soiling effects of people and property



| Receptor Sensitivity | Annual Mean PM10 Concentration | Number of Receptors | Distance from the Source (m) | | | | |
|----------------------|--------------------------------|---------------------|------------------------------|--------|--------|--------|------|
| | | | <20 | <50 | <100 | <200 | <350 |
| High | >32µg/m3 | >100 | High | High | High | Medium | Low |
| | | 10-100 | High | High | Medium | Low | Low |
| | | 1-10 | High | Medium | Low | Low | Low |
| | 28-32µg/m3 | >100 | High | Medium | Low | Low | Low |
| | | 10-100 | High | Medium | Low | Low | Low |
| | | 1-10 | High | Medium | Low | Low | Low |
| | 24-28µg/m3 | >100 | High | Medium | Low | Low | Low |
| | | 10-100 | High | Medium | Low | Low | Low |
| | | 1-10 | Medium | Low | Low | Low | Low |
| | <24µg/m3 | >100 | Medium | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low | Low |
| Medium | >32µg/m3 | >10 | High | Low | Low | Low | Low |
| | | 1-10 | Medium | Low | Low | Low | Low |
| | 28-32µg/m3 | >10 | Medium | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low | Low |
| | 24-28µg/m3 | >10 | Low | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low | Low |
| | <24µg/m3 | >10 | Low | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low | Low |
| Low | - | >1 | Low | Low | Low | Low | Low |

Sensitivity of the area to human health impacts

| Receptor Sensitivity | Distance from the Source (m) | |
|----------------------|------------------------------|--------|
| | <20 | <50 |
| High | High | Medium |
| Medium | Medium | Low |
| Low | Low | Low |

Sensitivity of the Area to Ecological Impacts

In addition to the tables above, site-specific factors have been taken into account when defining the sensitivity of the area including:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors; and
- the duration of the potential impact, as a receptor may become more sensitive over time

The sensitivity of the area has been defined based on the following information:

- An estimated 10-100 'high' sensitivity receptors within 20m of the site;
- Low PM10 background concentrations (average 19.26 µg/m3 for 2021);
- No 'high' sensitive receptors in relation to ecology within 50m of the site.



The sensitivity assessment of the surrounding area is, therefore, shown in the table below:

| Potential Impact | Sensitivity of the Surrounding Area | | | |
|------------------|-------------------------------------|------------|--------------|----------|
| | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | High | High | High | High |
| Human Health | Low | Low | Low | Low |
| Ecological | Low | Low | Low | Low |

3.0 Discussion of AQRA

The completed pre-mitigation impact risk assessment incorporating the sensitivity of the area and the dust emissions magnitude for the four stages of construction activities is shown below.

| Potential Impact | Risk | | | |
|------------------|------------|------------|--------------|----------|
| | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | Medium | Low | Medium | Medium |
| Human Health | Negligible | Negligible | Low | Low |
| Ecological | Negligible | Negligible | Low | Low |

The pre-mitigation risk of dust soiling has been assessed to be medium/low with the human health risk considered low/ negligible and the ecological risk as low/negligible.

Prior to the implementation of any mitigation measures, the highest potential impact was a medium risk for dust soiling during any of the four stages of construction activities. Additionally, it has been identified that the risk to human health and the local ecology is potentially low, with a dust emissions magnitude considered to be medium/small.

Mitigation measures will, therefore, be proposed in order to reduce the risks of adverse effects from the program. It is desirable, through mitigation measures, that potentially significant adverse dust effects will not occur, and the residual effect will normally be 'not significant'. Where necessary, these mitigation measures could be secured through planning conditions.

It should be noted that, even with a rigorous DMP in place, it is not possible to guarantee that all mitigation measures will be effective at all times. The likely impact of these short-term occurrences, however, would not normally be considered sufficient to change the conclusion of this assessment. It is important, therefore, to consider all mitigation measures and frequently review work practices to ensure that mitigation measures continue to provide the maximum attenuation level possible.



4.0 Mitigation Measures

Specific mitigation measures can be applied to the level of risk associated with the construction activity.

During the demolition and construction phases, the management and control of dust levels generated by the works is essential to reduce the impact on the local air quality. Dust will be controlled through the implementation of best practice guidance to minimise and prevent dust impacts, mainly through the use of dust suppressant tools during demolition and construction. The mitigation measures described below are proposed:

4.1 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);
- Wherever reasonably practicable, retain walls and windows while the rest of the building is demolished to provide a screen against dust;
- Bag and remove any biological debris or damp down such material before demolition;
- Ensure effective water suppression is used during demolition operations, handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is required.

4.2 Earthworks

- Avoid scabbling (roughening of concrete surfaces) where possible;
- Avoid carrying out any earthworks during dry weather, if reasonably practicable, having regard to programme and contracting arrangements for the relevant works or provide and ensure appropriate use of water to control dust.

4.3 Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out unless required for a particular process;
- Mix large quantities of cement, grouts and other similar materials in enclosed areas remote from site boundaries and nearby receptors;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- For small supplies of fine powder ensure bags are sealed after use and are stored appropriately to prevent dust.



4.4 Trackout

- Ensure any vehicles arriving and leaving site are securely covered to prevent escape of materials during transport;
- Routinely clean public roads and any access routes using wet sweeping methods;
- Avoid dry sweeping.

4.5 General mitigation measures include:

- Carry out regular on-site and off-site inspections to monitor dust soiling effects, with cleaning to be provided if necessary. Increase the frequency of inspections when activities with a high potential to produce dust are being carried out;
- Ensure regular cleaning of hardstanding surfaces using wet sweeping methods;
- Ensure any concrete crusher or batcher has permit to operate;
- Reduce cutting, grinding and sawing on site by sourcing pre-fabricated materials. If required, dust suppression and extraction must be used as the material is cut;
- Ensure all vehicles switch off engines when stationary, so that there are no idling vehicles;
- Securely cover skips and minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine sprays on such equipment wherever possible;
- Use of hard surfacing and clean haul routes;
- Clean vehicles and use of wheel washing machines prior to leaving site;
- Enclose stockpiles or keep them securely sheeted;
- Bund areas used for the storage of diesel fuel or chemicals;
- Non road mobile machinery should be fitted with catalytic exhaust treatment and particulate traps;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Screen areas of the building, where dust producing activities are taking place, with debris screens or sheeting;
- Erect barriers around the site, for any dusty activities and stockpiles (the latter of which should be covered);
- Remove materials that have a potential to produce dust as soon as possible, unless they are being re-used. If they are to be re-used, on site covers should be used;
- Avoid bonfires and the burning of waste materials.
- Real time PM Monitors with trigger level alerts;



- Log all air quality complaints, identify the cause(s), take appropriate measures to reduce emissions in a timely manner and record all measures taken. Make the complaints log available to the Local Authority when requested.
- Display the head or regional office contact information of the organisation accountable for air quality on the site boundary;
- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;

It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.

5.0 Air Quality Monitoring

The requirement for dust monitoring is usually broken down into three categories.

- **Low/Negligible risk category sites**

It should not normally be necessary to undertake any quantitative air quality monitoring for low/negligible risk category sites. In some circumstances, however, it may be advisable to undertake occasional surveys in the vicinity of the site boundary.

- **Medium risk category sites**

It should normally be adequate to undertake surveys of dust flux over the site boundary, and/or dust deposition/soiling rates around the site and at nearby receptors. This may, however, have resource implications, and continuous particulate matter monitoring may be preferred.

- **High risk category sites**

It should normally be necessary to supplement the monitoring for medium risk sites with monitoring of ambient PM concentrations. It is recommended that priority be assigned to the measurement of PM₁₀, as emissions of dust from construction sites are predominantly in the coarser fractions.

The proposed development site has been assessed as having a medium risk of dust soiling. According to Camden London Borough Council's CMP pro-forma, 2 real time dust monitors will be required if the site is a 'medium impact site'.



Dust monitoring in accordance with the above criteria should ideally be undertaken during the relevant stages of construction to ensure that:

- The construction activities do not give rise to any exceedances of the air quality objectives for PM10;
- The agreed mitigation measures to control dust emissions are being applied and are effective;
- Any high levels of dust are attributed to specific activities on site to ensure that appropriate corrective measures take place.

Dust monitoring should be undertaken in general accordance with 'The Mayor of London Supplementary Planning Guidance on the Control of Dust and Emissions during construction and demolition'. A copy of this document should be kept on site and the implications within be understood and implemented by site workers.

APPENDIX 36B

**MITIGATION
CHECK LIST
- DUST AND
EMISSIONS
SPG 220117**

APPENDIX 36 MITIGATION CHECKLIST (Extracted - SPG APPENDIX 7)

Lincoln House 296-302 High Holborn, London WC1V 7JH

MEASURES RELEVANT FOR DEMOLITION, EARTHWORKS, CONSTRUCTION AND TRACK-OUT

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|---|----------|-------------|-----------|
| Site management | | | |
| Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. | | XX | |
| Develop a Dust Management Plan. | | XX | |
| Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary. | | XX | |
| Display the head or regional office contact information. | | XX | |
| Record and respond to all dust and air quality pollutant emissions complaints. | | XX | |
| Make a complaint's log available to the local authority when asked. | | XX | |
| Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection-log available to the local authority when asked. | | XX | |
| Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions. | | XX | |
| Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book. | | XX | |

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|---|----------|-------------|-----------|
| Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. | | XX | |
| Preparing and maintaining the site | | | |
| Plan site layout: machinery and dust causing activities should be located away from receptors. | | XX | |
| Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site. | | XX | |
| Fully enclosure site or specific operations where there is a high potential for dust production and the site is active for an extensive period. | | XX | |
| Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution. | | X | |
| Avoid site runoff of water or mud. | | XX | |
| Keep site fencing, barriers and scaffolding clean using wet methods. | | XX | |
| Remove materials from site as soon as possible. | | XX | |
| Cover, seed or fence stockpiles to prevent wind whipping. | | XX | |
| Carry out regular dust soiling checks of buildings within 100m of site boundary and cleaning to be provided if necessary. | | X | |
| Provide showers and ensure a change of shoes and clothes are required before going off-site to reduce transport of dust. | | X | |
| Agree monitoring locations with the Local Authority. | | XX | |
| Where possible, commence baseline monitoring at least three months before phase begins. | | XX | |

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|--|----------|-------------|-----------|
| Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly. | | XX | |
| Operating vehicle/machinery and sustainable travel | | | |
| Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone. | | XX | |
| Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance. | | XX | |
| Ensure all vehicles switch off engines when stationary – no idling vehicles. | | XX | |
| Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible. | | XX | |
| Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). | | XX | |
| Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. | | XX | |
| Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). | | XX | |
| Operations | | | |
| Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. | | XX | |

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|--|-----------------|--------------------|------------------|
| Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible). | | XX | |
| Use enclosed chutes, conveyors and covered skips. | | XX | |
| Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. | | XX | |
| 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. | | XX | |
| Waste management | | | |
| Reuse and recycle waste to reduce dust from waste materials | | XX | |
| Avoid bonfires and burning of waste materials. | | XX | |

MEASURES SPECIFIC TO DEMOLITION

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|---|-----------------|--------------------|------------------|
| Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). | | XX | |
| Ensure water suppression is used during demolition operations. | | XX | |
| Avoid explosive blasting, using appropriate manual or mechanical alternatives. | | XX | |
| Bag and remove any biological debris or damp down such material before demolition. | | XX | |

MEASURES SPECIFIC TO EARTHWORKS

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|--|-----------------|--------------------|------------------|
| Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces. | n/a | n/a | |
| Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil. | | XX | |
| Only remove secure covers in small areas during work and not all at once. | | XX | |

MEASURES SPECIFIC TO CONSTRUCTION

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|--|-----------------|--------------------|------------------|
| Avoid scabbling (roughening of concrete surfaces) if possible | | XX | |
| Ensure sand and other aggregates are stored in banded 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 | | XX | |
| Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. | | XX | |
| For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust. | | XX | |

MEASURES SPECIFIC TO TRACKOUT

| MITIGATION MEASURE | LOW RISK | MEDIUM RISK | HIGH RISK |
|---|----------|-------------|-----------|
| Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site. | | XX | |
| Avoid dry sweeping of large areas. | | XX | |
| Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport. | | XX | |
| Record all inspections of haul routes and any subsequent action in a site logbook. | | XX | |
| Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems and regularly cleaned. | | XX | |
| Inspect haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable; | | XX | |
| Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). | | XX | |
| Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. | | X | |
| Access gates to be located at least 10m from receptors where possible. | | X | |
| Apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site | | XX | |

XX Highly Recommended

X Desirable

APPENDIX 38

HANN

TUCKER NDV

MANAGEMENT

PLAN 220216

Lincoln House, 296-302 High Holborn Camden Borough

Noise, Vibration and Dust Management Plan

29389/NVD1

16 February 2022

For:
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Noise, Vibration and Dust Management Plan 29389/NVD1

Document Control

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| 1 | 16/02/2022 | Section 10. 'Environmental Monitoring Locations' table revised. |  |  |
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This report has been prepared by Hann Tucker Associates Limited (HTA) with all reasonable skill, care and diligence in accordance with generally accepted acoustic consultancy principles and the purposes and terms agreed between HTA and our Client. Any information provided by third parties and referred to herein may not have been checked or verified by HTA unless expressly stated otherwise. This document contains confidential and commercially sensitive information and shall not be disclosed to third parties. Any third party relies upon this document at their own risk.



Noise, Vibration and Dust Management Plan 29389/NVD1

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Appendices

Appendix A – Acoustic Terminology

Appendix B – Predicted Airborne Noise Levels at Neighbouring Receptors

Location Plan 29389/LP1

Site Plan Showing Proposed Monitoring Positions 29389/SP1

Air Quality (Dust) Risk Assessment 29389/AQRA-1



1.0 Introduction

It is proposed to redevelop Lincoln House, 296-302 High Holborn, London. The redevelopment involves partly demolishing the rear of the building in order to create a refurbished ten-storey contemporary office building. The proposed site works include demolition, sub-structure, super-structure, envelope and fit out.

Hann Tucker Associates have been appointed to produce a Noise, Vibration & Dust (NVD) Management Plan to assist with the CMP application to Camden Borough Council for the Lincoln House redevelopment project.

This report discusses noise and vibration relating to neighbouring sensitive receptors for inclusion with the McLaren construction management plan.

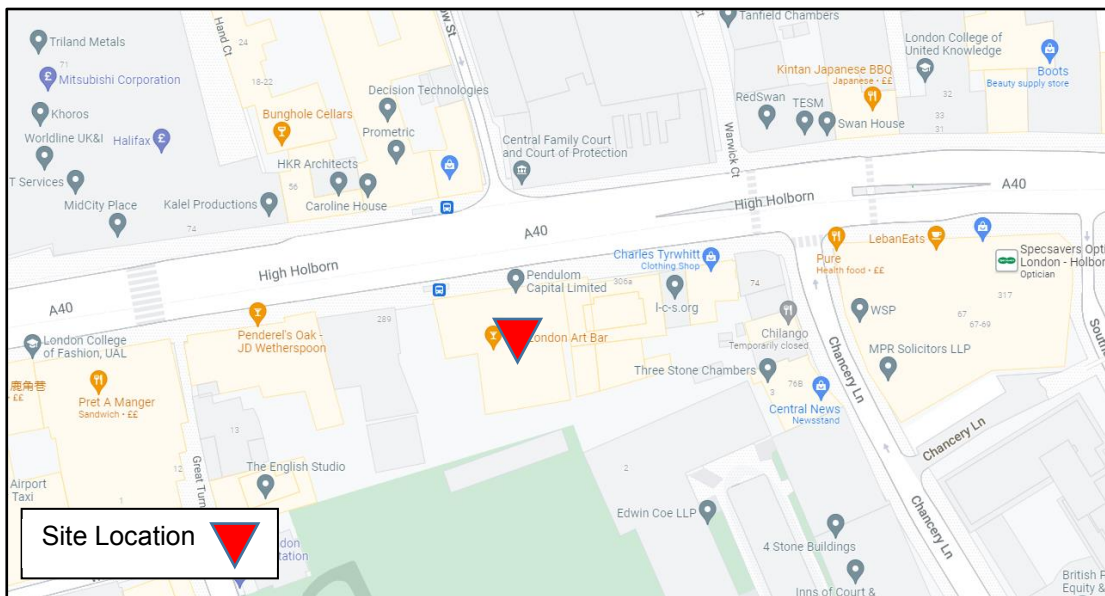
2.0 Acoustic Terminology

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

3.0 Site Description

3.1 Site Location

The site is located at 296-302 High Holborn, within the London Borough of Camden. See Location Map below.



Location Map (Map Data ©2021 Google)



3.2 Site Description

The current structure at Lincoln House comprises of a 9-storey building including ground level, plus a basement area. The site is approximately 33m long and 30m wide.

The site is situated approximately 200m West of Chancery Lane underground station and is bounded to the North by High Holborn Road (A40).

The surrounding area contains a mixture of building type including residential properties, restaurants, shops, and office space. See Site Plan below.



Location Map (Map Data ©2021 Google)



The nearest receptors to each side of the site are summarised in the table below.

| Receptor | Name/Address | Use(s) | Description | Approximate Distance to Site |
|----------|--|-----------------------------------|---|---|
| North | First Avenue House, 42-49 High Holborn | Court Building | A 10-storey court building including ground floor level. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| | 50-51 High Holborn | Commercial Building | A 5-storey commercial building with retails on the ground floor and offices from 1 st to 4 th floors. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| | High Holborn House, 52-54 High Holborn | Commercial / Residential Building | A 7-storey mixed-use building with retails on the ground floor, offices from 1 st to 5 th floors and residential properties on the 6 th floor. | The receptor is across High Holborn, approximately 21m from the northern edge of site. |
| West | Celcon House, 289-293 High Holborn | Office Building | A 9-storey office building including ground floor level. | The receptor is approximately 8m from the western edge of site. |
| East | Northumberland House, 303-306 High Holborn | Commercial Building | A 9-storey commercial building with retails on the ground floor and offices from 1 st to 8 th floor. | The receptor is connected (from ground floor to 8 th floor) to the eastern edge of site. |
| South | 1-7 Stone Buildings | Office / Residential Building | Grade I Listed Building. A 5-storey building with primarily office spaces and several residential properties on the 3 rd floor. | The receptor is approximately 6m from the southern edge of site. |
| | Lincoln's Inn Private Gardens | External Amenity Space | A public green space. | The receptor is approximately 6m from the southern edge of site. |

The site and receptor locations are detailed on the Location Plan 29389/LP1 enclosed.

3.3 Site Working Hours

We understand that work is proposed to take place between the hours of 08:00 and 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturday only. These daytime periods shall hereby be referred to as the 'Working Day'.



4.0 British Standard BS5228

The relevant industry standard which should be considered for all demolition and construction activities is British Standard BS5228:2009 '*Code of Practice for Noise and Vibration Control on Construction and Open Sites*'. This document has two parts with Part 1 relating to noise control and Part 2 vibration. The sections below summarise important sections of the document, however, it is also regarded as best practice for a copy of said document to be kept on site and/or be understood and regularly referred to by site management.

4.1 Part 1 - Noise

British Standard BS5228:2009 '*Code of Practice for Noise and Vibration Control on Construction and Open Sites*' - Part 1, is recognised as the industry standard guidance for assessing, quantifying and controlling the effects of noise on demolition and construction sites.

BS5228 details mitigation techniques widely recognised as Best Practicable Means (BPM). BPM is outlined in Section 72 of the Control of Pollution Act 1974.

BS5228 gives guidance on the assessment of noise and suggests particular attention be paid to the following:

- a) Existing environmental noise levels;
- b) Site location and distance to neighbouring sensitive receptors;
- c) Management of site operations and timings of certain works;
- d) Over site hours;
- e) Suitable plant items;
- f) Frequent liaison with neighbours;
- g) Noise characteristics of certain operations.

In accordance with modern working practices, the principles of 'best practicable means' (BPM), as defined in the Control of Pollution Act 1974, should be used to reduce noise emissions throughout the works. This would incorporate the use of environmental management methods to control noise, so that it does not unreasonably inhibit work, and endorse the use of working methods that result in minimum noise effects compatible with normal working practices.

Owing to the nature of the building processes, it is inevitable that a temporary increase in noise will be experienced during the works. All works are to be carried out in accordance with any agreed limitations as imposed by the Local Authority and following best practice guidance contained within BS5228:2009.



On receipt of complaints, method reviews should be undertaken to see if the operation cannot realistically be modified under the 'best practicable means' principle and with consideration to BS5228. If reduction of this noise level is unavoidable using BPM, the next actions should include contacting a named person within neighbouring affected property to inform them of the activities and resulting noise risk and its likely duration. A record of all actions/correspondence should be kept.

It should be recognised that any excessive restriction applied to noise levels and hours of work, will result in a longer time period over which noisy works will be required, and as such this will result in a longer period of disturbance to the neighbours.

If significant items of percussive/noisy plant are required, it might be productive to undertake a 'worst case' test on site well in advance of these items being used. This test could be used to inform the contractor and neighbours to likely noise levels, and to ensure and refine BPM.

4.2 Part 2 - Vibration

British Standard BS5228:2009 '*Code of Practice for Noise and Vibration Control on Construction and Open Sites*' - Part 2, provides detailed advice on the assessment of vibration from demolition and construction sites.

BS5228 gives guidance on the assessment of vibration and suggests particular attention be paid to the following:

- a) Existing environmental vibration levels;
- b) Site location and distance to neighbouring sensitive receptors;
- c) Structural connections to neighbouring property;
- d) Management of site operations and timings of certain works;
- e) Site operating hours;
- f) Suitable plant items;
- g) Frequent liaison with neighbours;
- h) Vibration characteristics of certain operations;
- i) Likelihood of structure borne noise resulting from vibration.



BS5228-2:2009 provides the following guidance with regard to human perception and disturbance relating to vibration:

- 0.14mm/s - Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction;
- 0.30mm/s - Vibration might be just perceptible in residential environments;
- 1.00mm/s - It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents;
- 10.00mm/s - Vibration is likely to be intolerable for any more than a brief exposure to this level.

5.0 On-Site Noise

Due to the nature of demolition and construction works it is inevitable that a temporary increase in noise will be experienced by others.

It is anticipated that there will be airborne external noise level implications for nearby properties, but noise levels will generally be within expected typical construction levels. Expected noise levels are reviewed in Section 12.0 and Appendix B at the end of this report.

It is also envisaged that structureborne noise could be deemed a nuisance for the receptor attached on the eastern side of the site, namely Northumberland House situated at 303-306 High Holborn. Trial works might need to be undertaken to assess the likely noise/vibration impact on the connected receptor, which could help inform best practice.

All works will need to be carried out in accordance with any agreed guidance and where possible limitations imposed by the Local Authority Environmental Health Department.

The selection and use of equipment should be closely monitored to ensure it has been chosen with minimising noise and vibration in mind. All site plant and equipment should be effectively attenuated and positioned where possible so as to cause the least amount of noise pollution to others within the site or site neighbours.

Noise should be minimised through best practice. Working hours are proposed to be 08:00 – 18:00 Monday to Friday and 08:00 to 13:00 Saturday. No Works should be carried out on Sundays or Bank Holidays without the approval of the Local Authority and a Section 61 Amendment/Dispensation process.



Neighbours should be informed of potentially noisy works following regular site meetings. All calls to site during working hours shall be logged and responded to within 24 hours by a site representative. A Public Liaison Officer (PLO) should be introduced from an early stage to communicate with neighbours and inform them of any noisy works in advance.

Any change to working hours should be agreed in advance with Camden Council and would include the following:

- Reasons for the change to works
- Details of the operation and methods
- Predicted noise levels at relevant noise sensitive locations and mitigation proposals
- Date and time proposed to carry out the works
- Proposed duration of the works
- Person responsible on site
- Telephone contact
- Letter/email sent out notifying neighbours prior to commencement

The construction works should comply with BS5228-1:2009+A1:2014 '*Code of practice for noise and vibration control on construction and open sites*' and the following general mitigation measures are proposed:

- Modern, attenuated and well-maintained plant will be used at all times, conforming to standards set out in the EU Directives
- Equipment and vehicles to be shut down when not in use
- Semi-static equipment is to be sited and oriented as far as is reasonably practicable away from noise sensitive receptors or inside completed buildings and will have localised screening if deemed necessary

Generators and water pumps if required will be effectively attenuated and acoustically screened as appropriate.

Routes and programming for the transport of construction materials, personnel etc. are to be carefully considered in order to minimise the overall noise impact generated by these movements.



All staff and subcontractors have the responsibility to:

- Work to agreed plans, methods and procedures to minimise noise as well as how to respond in the event of an incident to avoid or limit the noise and/or vibration impact to neighbouring buildings
- Where possible all communications between supervisory personnel within the site will be by 2-way radios
- Any undue noise such as shouting, whistling, playing of radios, sounding of vehicle hooters will be strictly forbidden

There will be no site activities, including the arrival of waste Lorries etc. and the starting up of site plant engines before 8:00am and after 6:00pm on Monday to Friday and before 8:00am and after 1:00pm on Saturday. Any such activities required to be carried out outside these times should be agreed with the Local Authority and any adjacent affected receptors.

External airborne noise levels on site are to be monitored by Hann Tucker Associates with measurements taken at strategic points around the site. All noise level readings are recorded with our state-of-the-art monitoring equipment, with direct access to live data available via our HT Cloud online monitoring system. The proposed noise monitoring locations are detailed in Section 10.0 and shown on the enclosed Site Plan 29389/SP1.

Noise monitoring procedures should be put in place in accordance with BS5228 and the Section 61 consent, for recording and reporting noise data and for taking action in the event of any non-compliance.

The monitoring equipment comprises Class 1 (Type 1) data logging sound level meters with outdoor weatherproof kit, and complies with BS5969, BS7445 and BS5228. A copy of BS5228 should be kept on site and the implications within be understood by all site workers.

Email alerting is to be set up (subject to GSM network reception) to inform the site team of any exceedance of predetermined noise action levels. Site management shall keep a log of site investigations following any alerts. There is the facility for keeping this log on the HT Cloud secure website.



Based on Camden's minimum requirements, it is suggested the Section 61 Consent agreed with Camden Council could contain wording similar to the example below for triggering the action alert messages as follows:

"...where measured noise levels are more than 3 dB(A) above the predicted noise levels as set out in the application and/or in the event of a complaint of noise and/or vibration, an investigation shall be carried out to ascertain the cause of the exceedance and to check that Best Practicable Means are being used to control the noise and/or vibration. Noise levels shall be reduced further if it is reasonably practicable to do so."

Where the measured noise levels are above any proposed trigger/action levels, an investigation shall be carried out to ascertain the cause of the exceedance and to check that Best Practicable Means are being used to control the noise, and to see if the operations cannot realistically be modified under the 'Best Practicable Means' (BPM) principle. If the levels are unavoidable using BPM, the next action should be to contact a named person at the Local Authority and within neighbouring affected properties to inform them of the activities, the resulting noise risk and its likely duration.

Noise action levels and monitoring locations should be reviewed (typically monthly) based on the measurement data, guidance, predicted levels and feedback from the local community.

It is widely recognised in the industry that people are willing to accept a significant increase of noise for a shorter period of time verses a 'medium' noise nuisance for a long period of time. It might therefore be beneficial to increase (maybe double) the workforce and number of plant items, for some activities for a brief period of time, to significantly speed up the process but with a minimal noise increase penalty. Consider the difference in noise impact of one activity vs two equal activities is an increase of only 3dB.

6.0 On-Site Vibration

Owing to the nature of demolition and construction works it is inevitable that a temporary increase in vibration will be experienced during this time. It is anticipated that there could be vibration level implications for people within nearby properties, and especially for those in the same building. The potential exists for vibration from the proposed works to impact upon Northumberland House, which is connected to site directly on the east.



Activities must be carried out in such a way that the vibrations arising will not cause damage to adjacent structures as well as to minimise disturbance to neighbours. Guidance is provided within BS: 7345: *Evaluation and Measurement for Vibration in Buildings Part 2: 1993*, regarding transient vibration levels for cosmetic damage:

| Transient Vibration Guide Values for Cosmetic Damage | | | |
|--|--|---|---|
| Type | Type of Building | Peak Component Particle Velocity in Frequency Range of Predominant Pulse (P.P.V.) | |
| | | 4Hz to 15Hz | 15Hz and above |
| 1 | Reinforced or framed structures industrial and heavy commercial buildings | 50mm/s at 4Hz and above | |
| 2 | Unreinforced or light framed structures Residential or light commercial type buildings | 15mm/s at 4Hz increasing to 20mm/s at 15Hz | 20mm/s at 15Hz increasing to 50mm/s at 40Hz and above |

BS: 7345: *Evaluation and Measurement for Vibration in Buildings Part 2: 1993* also states “Where dynamic loading caused by continuous vibration is such as to give rise to dynamic magnification, especially at the lower frequencies where lower guide values apply, then the guide values in Table 1 may need to be reduced by up to 50%”.

BS 7385 also states that “some data suggests that the probability of damage tends towards zero at 12.5mm/s peak component particle velocity.”

BS 5228-2: 2009 *Code of Practice for noise and Vibration Control on Construction and Open Sites – Part 2: Vibration* states that “Whilst the assessment of the response to vibration in BS 6472 is based on the VDV and weighted acceleration, for construction it is considered more appropriate to provide guidance in terms of the PPV, since this parameter is likely to be more routinely measured based upon the more usual concern over potential building damage”. BS 5228-2: 2009 also provides the following guidance with regard to human perception and disturbance:

| Vibration Level PPV (mm/s) | Effect |
|----------------------------|---|
| 0.14 | Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration. |
| 0.3 | Vibration might be just perceptible in residential environments. |
| 1.0 | It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents. |
| 10.0 | Vibration is likely to be intolerable for any more than a brief exposure to this level. |



All staff and subcontractors have the responsibility to work to agreed plans, methods and procedures to minimise vibration and understand how to respond in the event of an incident to avoid or limit the vibration impact. Steps to minimise vibration from activities can be found in Section 8.0 of this report.

Vibration levels are to be monitored by Hann Tucker Associates to ensure, where possible, they are kept to a minimum and are within any agreed guidance and limitations imposed by the Local Authority. Vibration Monitoring procedures are to be put in place for recording and reporting monitoring results and taking remedial action in the event of any non-compliance. All vibration readings are to be recorded with our state-of-the-art monitoring equipment, with direct access to live data available via our HT Cloud online monitoring system. Action trigger levels shall be reported via email to the site team if any agreed action level is exceeded. The proposed vibration monitoring locations are detailed in section 10.0 and shown on the enclosed Site Plan 29389/SP1.

The equipment will comprise data logging vibration meters located within outdoor weather kits. Vibration monitoring is to be undertaken in general accordance with BS5228-2:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Vibration'. All equipment has multi-network SIM cards which upload live data to the HT Cloud monitoring system. This enables data and alerts to be displayed via a project specific website. Email alerting is to be provided (subject to GSM network reception) to alert the site team of any exceedance of proposed vibration action levels.

Based on Camden's minimum requirements, we would suggest the Section 61 Consent agreed with Camden Council could contain wording similar to the example below for triggering the action alert messages as follows:

'In the case of vibration, measured vibration levels shall be compared with the criteria in BS 5228: 2009 part 2 (i.e. 1mms⁻¹ PPV for potential disturbance in residential and using a suggested trigger criteria of 2mms⁻¹ for commercial). Lower limits must be agreed with the Council if there is a risk that vibration levels may interfere with vibration sensitive equipment or other vibration sensitive objects.'

The vibration trigger level is initially proposed as 1mm/s Peak Particle Velocity (PPV) for residential and other sensitive receptors and 2mm/s PPV for commercial receptors. The actions to be taken should firstly comprise a method review to see if the operation cannot realistically be modified under 'Best Practicable Means'. If this level is unavoidable using BPM, the next action should include contacting a named person within the neighbouring affected property to



inform them of the activities, resulting vibration risk and its likely duration.

The vibration action level is initially considered to be 3mm/s PPV for residential and other sensitive receptors and 5mm/s PPV for commercial receptors. Where the measured vibration levels are above the action levels, the work activity which is likely to be causing the exceedance shall cease and an investigation shall be carried out to ascertain the cause of the exceedance to see if the activity can be modified to not exceed these levels. The activity should not recommence until the following day. The neighbouring affected tenants and Local Authority should also be consulted. The developer should determine if further mitigation measures are possible and/or ascertain whether respite accommodation is required for any affected parties.

The following table outlines our proposed vibration monitoring trigger levels and action levels.

| Proposed Vibration Monitoring Trigger Levels and Action Levels | | | |
|--|------------------------------|-----------------------------|---------------------------------|
| Position | Proposed Trigger Level (PPV) | Proposed Action Level (PPV) | Action |
| All | 1 mm/s | 3 mm/s | Automated alert to be triggered |

Please note that the above proposed trigger levels are based upon Camden's minimum requirements. It should be noted that BS7385 states that the chance of cosmetic damage '*tends towards zero*' at PPV levels of <12.5mm/s.

The above description of vibration only considers the impact from a tactile vibration point of view, whereas structure-borne noise is likely to be of greatest concern to those in the attached buildings. Structure-borne noise is caused by the vibration from demolition/construction activities radiating through the building structures and can transmit across a great distance over many floors. Prediction of structure-borne noise is unpredictable and would require a trial works investigation (as suggested in Section 3.0). Where possible, steps should be taken to reduce to a minimum the use of percussive power tools.

There might be some activities that have potential to regularly exceed 1mm/s. As described in the industry standard BS5228, it is likely that vibration of this level could cause complaint but can be tolerated if prior warning and explanation has been given to those affected. Regular liaison is important with neighbours/tenants.

Vibration action levels and monitoring locations will need to be reviewed periodically (typically monthly) based on measurement data, guidance and feedback from the council and local community.



7.0 On-Site Dust

Owing to the nature of demolition and construction works it is inevitable that a temporary increase in dust will be experienced during this time. It is anticipated that there could be air quality level implications for people within nearby properties, and especially for those in the same building.

Hann Tucker Associates have previously undertaken an Air Quality Risk Assessment (AQRA) in order to assess the potential for dust impacts during demolition, earthworks, construction and trackout associated with the Lincoln House development. The AQRA identifies the risk of potential dust emissions and recommends control measures required to minimise any significant effects. These control measures, when implemented, should help safeguard the health and well-being of local sensitive receptors. Further details can be found in the enclosed Air Quality (Dust) Risk Assessment 29389/AQRA-1 dated 30 November 2021 at the end of this report.

Activities must be carried out in such a way that the dust arising will cause minimise disturbance to neighbours. All staff and subcontractors have the responsibility to work to agreed plans, methods and procedures to minimise dust and understand how to respond in the event of an incident to avoid or limit the dust impact. Dust levels are to be monitored by Hann Tucker Associates to ensure, where possible, they are kept to a minimum and are within any agreed guidance and limitations imposed by the Local Authority.

Dust monitoring procedures are to be put in place for recording and reporting monitoring results and taking remedial action in the event of any non-compliance. All dust readings are to be recorded with our state-of-the-art monitoring equipment, with direct access to live data available via our HT Cloud online monitoring system. Action trigger levels shall be reported via email to the site team if any agreed action level is exceeded. The proposed air particle (dust) monitoring locations are detailed in section 10.0 and shown on the enclosed Site Plan 29389/SP1.

The equipment will comprise data logging airborne particle (dust) meters with outdoor weather proof kit. Dust monitoring to be undertaken in general accordance with The Mayor of London Supplementary Planning Guidance on the Control of Dust and Emissions during Construction and Demolition. A copy of this document should be kept on site and the implications within be understood by site workers.

The equipment will measure the average PM10 levels over 15 mins intervals. Email alerting is to be provided (subject to GSM network reception) to alert site management of an exceedance of the PM10 trigger and/or action levels.



All equipment will have multi network SIM cards which upload data to the HT Cloud portal. This enables data and alerts to be displayed via a project specific website.

The following table outlines our proposed dust trigger and action levels, in line with industry standards.

| Proposed Dust Monitoring Trigger Levels and Action Levels | | | |
|---|-------------------------------|------------------------------|---------------------------------|
| Position | Proposed Trigger Level (PM10) | Proposed Action Level (PM10) | Action |
| All | 150µg/m ³ | 250µg/m ³ | Automated alert to be triggered |

8.0 Steps to Minimise Noise and Vibration

To minimise the generation of noise and vibration, the following control measures, precautions and constraints should be considered:

- Take all reasonable steps to prevent any public or private nuisance (including, but not limited to, any noisy working operations). This applies in relation to occupiers of the neighbouring properties.
- The management of noise will be afforded the highest priority. It has to be noted, however, that the creation of noise, audible at the site boundary and within neighbouring properties, is inevitable when carrying out works of this nature. The management regime will, therefore, focus on minimising noise where practical and, perhaps more importantly, minimising the adverse impact of that noise.
- We understand it is proposed to undertake internal works whilst the existing façade is on where possible, to minimise airborne noise breakout. Ideally, noisier works (e.g. cutting/drilling/hammering) which are required to take place on site should be undertaken inside where possible.
- Non-percussive techniques will be employed for breaking-out or cutting concrete, where practical. This may include diamond sawing/diamond drilling and hydraulic crushing (although these techniques still generate audible noise). Furthermore, some elements will still require percussive breaking, although such instances will be closely monitored to ensure that a quieter alternative is considered when possible.
- All plant will be fitted with attenuators. Breakers will be fitted with baffles to reduce noise and vibration.
- Generators (if used) will be housed within acoustic enclosures to reduce noise levels.
- Where practical, the use of portable acoustic screens will be considered, to reduce and absorb noise in areas of intense structural activity and/or demolition works.



- The use of radios and personal audio devices will not be permitted on site.
- Endeavour to minimise the impact of noise, as well as reducing the actual sources of noise. To this end, where possible, noisy works will be carried out at times acceptable to the EHO while also accommodating the needs of adjoining neighbours if/when possible.
- Make early contact to advise neighbours of potentially noisy activities and, where practical, accommodate their specific needs. In addition, contact numbers will be provided to ensure direct communication with the site team.
- Delivery arrangements will be part of the traffic management plan to be agreed with Camden. Materials will be palletised where possible to shorten delivery times. Vehicle delivery times will be co-ordinated by the site management team and suppliers will be allocated time slots. There will be no deliveries outside of these times.
- Issue newsletters to properties in the vicinity of the works and follow this up with further newsletters at regular intervals throughout the project. Provide separate notifications for any major works (such as lane closures) that may impact local businesses and residents. Regular newsletters could contain the information listed below and could be issued electronically to the neighbours. Hard copies could be displayed at prominent positions on the perimeter hoarding.
 - Details of contact names and numbers;
 - 24/7 helpline number;
 - Forthcoming activities on site;
 - Planning and design related activities;
 - Specific mitigation/control measures relevant to forthcoming activities; and
 - Anticipated completion dates.
- In addition to newsletters, interim look-ahead notices could provide a pre-emptive community relations approach to cover upcoming works of particularly high sensitivity. The notices could contain a brief description of the proposed works, together with environmental control measures to be adopted, and could enable community others to plan activities taking into account upcoming site operations. Interim look-ahead notices could also be used to inform others of any out-of-hours works, including oversized site deliveries, which have not previously been notified.
- Site worker inductions will include information on reducing noise and vibration as follows:
 - Personnel will be instructed on BPM measures to reduce noise and vibration as part of their site induction training;
 - Shouting and raised voices shall be kept to a minimum. Use of radios is to be prohibited except where two-way radios are required for reasons of safety and communication;



- Neighbours will be kept informed of the times and dates of any potential noise nuisances;
 - Noise barriers, fences, etc. will be put in place where necessary and practically possible.
-
- Information relating to the control of noise and vibration will be communicated to all site operatives through the site induction, start of shift briefings and toolbox talks. As such, all site operatives will be trained to ensure that best practicable means (BPM) are implemented at all times, and to show due consideration to sensitive receptors.
 - All complaints and incidents should be recorded and responded to. The site-based representative will define procedures for managing incidents. A centralised register of all reported complaints and incidents should be maintained by the site-based representative. The appointed main contractor shall provide associated training to staff as necessary.
 - The site project manager walking around the site, and other occupied areas external to the site should be mindful at all times of reducing noise and vibration.
 - Prior to the approval of any methodologies (i.e. method statements), discussions and workshops will be held with the relevant sub-contractors to ensure BPM is employed when carrying out their operations. Discussion will include measures to be adopted to minimise and/or change working practices that could foreseeably have the potential to cause excessive noise and vibration.

Some further generic noise and vibration control measures could include the following:

- Fixed items of construction plant will be electrically powered in preference to diesel or petrol driven;
- Wherever practicable fabrication will be undertaken off site;
- Equipment will be shut down when not in use or throttled down to a minimum during waiting period;
- All materials will be handled in a manner that minimises impacts.
- Screws and drills will be used to construct where possible rather than hammers and nails.
- The long-term use of diesel or petrol powered generators will be avoided by using mains electricity;
- On-site cutting of metal might be undertaken by use of plasma cutting equipment rather than angle grinders.
- Mobile acoustic screens will be used where practicable to mitigate noise from various activities.



- A 4-sided semi-permanent structure should be assembled around fixed-location plant to support acoustic blankets. Non-fixed location should utilise acoustically lined mobile Heras style fencing around the activity.
- Loading of material into vehicles will, as far as reasonable practicable, be undertaken within designated bays.
- All vehicle movements associated with the worksite will only take place during normal working hours, unless otherwise agreed
- Where possible deliveries will be arranged on a just-in-time basis in order to prevent vehicles queuing outside site;
- Cutting equipment to be used with water suppressant or suitable extract system;
- Use of gas-powered generators and equipment rather than diesel if possible (these are also quieter).
- A hierarchy of controls to be established whereby before any contractor is allowed to start on site a detailed method statement and risk assessments will have to be produced explaining how they will carry out the work.

9.0 Steps to Minimise Dust

Guidance on how to mitigate the impacts of dust emissions from demolition/construction sites has been published by The Institute of Air Quality Management (IAQM) in their '*Guidance on The Assessment of Dust from Demolition and Construction*' in February 2014; This was substantially updated in June 2016 (v1.1). The Greater London Authority's (GLA's) Supplementary Planning Guidance '*The Control of Dust and Emissions During Construction and Demolition*', also published in 2014, broadly follows this guidance and provides details for dust risk assessments.

Specific mitigation measures can be applied to the level of risk associated with the construction activity.

During the demolition and construction phases the management and control of dust levels, generated by the works, is essential to reduce the impact on the local air quality. Dust will be controlled through the implementation of best practice guidance to minimise and prevent dust impacts, mainly through the use of dust suppressant tools during demolition and construction. The mitigation measures described below are proposed:



9.1.1 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);
- Wherever reasonably practicable, retain walls and windows while the rest of the building is demolished to provide a screen against dust;
- Bag and remove any biological debris or damp down such material before demolition; and
- Ensure effective water suppression is used during demolition operations, handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is required.

9.1.2 Earthworks

- Avoid scabbling (roughening of concrete surfaces) if possible;
- Avoid carrying out any earthworks during dry weather, if reasonably practicable, having regard to programme and contracting arrangements for the relevant works or provide and ensure appropriate use of water to control dust.

9.1.3 Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out unless required for a particular process;
- Mix large quantities of cement, grouts and other similar materials in enclosed areas remote from site boundaries and potential receptors;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and
- For small supplies of fine powder ensure bags are sealed after use and are stored appropriately to prevent dust.

9.1.4 Trackout

- Ensure any vehicles arriving and leaving site are securely covered to prevent escape of materials during transport;
- Routinely clean public roads and any access routes using wet sweeping methods; and
- Avoid dry sweeping.



9.1.5 General mitigation measures should include:

- Carry out regular on-site and off-site inspections to monitor dust soiling effects, with cleaning to be provided if necessary. Increase the frequency of inspections when activities with a high potential to produce dust are being carried out;
- Ensure regular cleaning of hardstanding surfaces using wet sweeping methods;
- Ensure any concrete crusher or batcher has permit to operate;
- Reduce cutting, grinding and sawing on site by sourcing pre-fabricated materials. If required, dust suppression and extraction must be used as the material is cut;
- Ensure all vehicles switch off engines when stationary, so that there are no idling vehicles;
- Securely cover skips and minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine sprays on such equipment wherever possible;
- Use of hard surfacing and clean haul routes;
- Clean vehicles and use of wheel washing machines prior to leaving site;
- Enclose stockpiles or keep them securely sheeted;
- Bund areas used for the storage of diesel fuel or chemicals;
- Non road mobile machinery should be fitted with catalytic exhaust treatment and particulate traps;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Screen areas of the building, where dust producing activities are taking place, with debris screens or sheeting;
- Erect barriers around the site, any dusty activities and stockpiles (the last of which should be covered);
- Remove materials that have a potential to produce dust as soon as possible, unless they are being re-used. If they are to be re-used, on site covers should be used;
- Avoid bonfires and the burning of waste materials.
- Real time PM Monitors with trigger level alerts;
- Log all air quality complaints, identify the cause(s), take appropriate measures to reduce emissions in a timely manner and record all measures taken. Make the complaints log available to the Local Authority when requested.
- Display the head or regional office contact information of the organisation accountable for air quality on the site boundary;
- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;

It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.



10.0 Environmental Monitoring Locations

It is initially proposed to install 9No. monitoring sensors at 6No. positions around the development site consisting of 3No. noise monitoring sensors, 3No. vibration monitoring sensors and 3No. air particle (dust) monitoring sensors. The proposed monitoring locations are indicated on the enclosed Site Plan 29389/SP1 at the end of this report and detailed below.

| Position No | Monitor(s) | Description |
|-------------|------------------|---|
| 1 | Noise 1 & Dust 1 | It is proposed to locate these monitors at ground level towards the west of the site. It is believed that this position shall represent sensitive receptors to the west of site. Both monitors will be positioned approximately 2m above the ground by fixing to the site hoarding or to tripods. |
| 2 | Noise 2 & Dust 2 | It is proposed to locate these monitors at ground level towards the north-east of the site. It is believed that this position shall represent sensitive receptors to the east of site and those across High Holborn. Both monitors will be positioned approximately 2m above the ground by fixing to the site hoarding. |
| 3 | Noise 3 & Dust 3 | It is proposed to locate these monitors at ground level towards the south-east of the site. It is believed that this position shall represent sensitive receptors to the south-east of site. Both monitors will be positioned approximately 2m above the ground by fixing to the site hoarding or tripods. |
| 4 | Vibration 1 | It is proposed to locate this monitor on the ground/basement floor towards the west of the site. It is believed that this position shall represent sensitive receptors to the west of site. |
| 5 | Vibration 2 | It is proposed to affix this monitor to the party wall between the site and Northumberland House to the east. This monitor shall be located on the ground/basement floor. Alternatively, the monitor will be positioned at ground level, at the base of the site hoarding towards the north-east corner of site. |
| 6 | Vibration 3 | It is proposed to locate these monitors on the ground/basement floor to the south-east of the site. It is believed that this position shall represent sensitive receptors to the south-east of site. |

Owing to access restrictions of which we may not be currently aware, these positions may differ to those actually used in the environmental monitoring.



11.0 Actions Following a Triggered Alert

In the event of a trigger level alert being received it will firstly be the duty of a designated site operative to determine the cause of said trigger. Once identified, the cause of the trigger shall be logged and, assuming that it has been caused by site activities, a method review of the contributing operations shall begin.

The method review shall determine if the operations can realistically be modified under the 'Best Practicable Means' (BPM) principle. If the method can be reasonably modified then it shall be and the operations may resume under the new methodology. If the level that generated a trigger level alert is unavoidable using BPM, the next action should be to contact a named person at the Local Authority and within neighbouring affected properties to inform them of the activities, the resulting risk and its likely duration.

Once the above review process has been completed, the log of the event should be completed with a record of actions taken.

In the event of an action level alert being received it will firstly be the duty of a designated site operative to determine the cause of said trigger. Once identified, the work activity which is likely to be causing the exceedance shall be ceased immediately. Assuming that the exceedance has been caused by site activities, a method review of the contributing operations shall begin.

The method review shall determine if the operations can realistically be modified under the 'Best Practicable Means' (BPM) principle. If the method can be reasonably modified then it shall be and the operations may resume under the new methodology. If the level that generated a trigger level alert is unavoidable using BPM, the next action should be to contact a named person at the Local Authority and within neighbouring affected properties for consultation. During consultation, the developer should determine if further mitigation measures are possible and/or ascertain whether respite accommodation is required for any affected parties. Should this consultation be required, then the operations that caused the alert should not resume until this consultation has been completed.

Trigger and action levels, along with monitoring locations, should be regularly reviewed (typically monthly) based on the measurement data, guidance, predicted levels and feedback from the local community.



12.0 Predicted Noise Levels

A list of the proposed machinery to be used during the works has been provided for this assessment.

The tables in Appendix B detail predicted airborne external noise levels of various activities (dBA $L_{eq,10hour}$). Calculations include source level, attenuation due to typical distance/location, % operation time and possible screening to the worst-affected properties around the site. These predictions do not include for the effects of structure-borne noise and vibration as this can only be determined by experiment. Note that it is anticipated that there will be significant screening from activities to the receptors to the north of the site. This is due to main demolition / construction activities being undertaken at the rear / south part of the site.

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_{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_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).

L_w Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).

NR *Noise Rating*. A method of assessing the frequency dependent sound pressure levels within a space. Gives a single figure result based upon a weighting curve roughly in line with the equal loudness curves.

R_w *Weighted Sound Reduction Index*. A single number quantity which characterises the airborne sound insulation of a material or building element in the laboratory.

D_w *Weighted Sound Level Difference*. A single number quantity which characterises the airborne sound insulation between rooms on site.

Appendix B

| Table B.1. Predicted Airborne Noise Levels (L _{Aeq,10hours}) at Facades North of Site - First Avenue House / 50-51 High Holborn / High Holborn House Court / Commercial / Residential | | | | | | | | | | | | | |
|---|-------------------------------|--------------|-----|-----------------------|------|-------------------|----------|---------------------|----------------------|---------------------|-------------------------------|---------------------------|--------------------|
| Activity | Plant/Equipment | BS5228 / Mfr | SWL | L _{Aeq} @10m | % On | % Time Correction | Quantity | Quantity Correction | Typical Distance (m) | Distance Correction | Possible Screening Correction | Predicted at Receptor dBA | Maximum Cumulative |
| Demolition | Hand tools | C.1.6 | 111 | 83 | 15% | -8 | 2 | 3 | 25 | -8 | -5 | 65 | 78 |
| | 16 T Excavators with breakers | C.1.9 | 118 | 90 | 60% | -2 | 2 | 3 | 25 | -8 | -5 | 78 | |
| | Delivery - Waste Collection | C.8.20 | 107 | 79 | 10% | -10 | 1 | 0 | 15 | -4 | 0 | 65 | |
| Sub-structure | 25T Excavator | C.2.19 | 105 | 77 | 30% | -5 | 1 | 0 | 25 | -8 | -10 | 54 | 80 |
| | 5T Excavator | C.2.25 | 97 | 69 | 50% | -3 | 2 | 3 | 25 | -8 | -10 | 51 | |
| | 5T Dumper | C.4.7 | 106 | 78 | 50% | -3 | 1 | 0 | 25 | -8 | -10 | 57 | |
| | Hand tools | C.3.31 | 101 | 73 | 15% | -8 | 3 | 5 | 25 | -8 | -5 | 57 | |
| | MP 5000s Piling Rigs | C.3.14 | 111 | 83 | 100% | 0 | 2 | 3 | 25 | -8 | 0 | 78 | |
| | Tower Crane | C.4.48 | 104 | 76 | 100% | 0 | 1 | 0 | 30 | -10 | 0 | 66 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 15 | -4 | 0 | 73 | |
| Super-structure (Concrete Core) | Striking of Shuttering | D.6.49 | 106 | 78 | 50% | -3 | 3 | 5 | 25 | -8 | 0 | 72 | 79 |
| | Hand tools | C.4.72 | 107 | 79 | 5% | -13 | 1 | 0 | 25 | -8 | 0 | 58 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 50% | -3 | 1 | 0 | 25 | -8 | 0 | 67 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 5% | -13 | 1 | 0 | 25 | -8 | 0 | 69 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 40% | -4 | 1 | 0 | 25 | -8 | 0 | 72 | |
| | Tower Crane | C.4.48 | 104 | 76 | 60% | -2 | 2 | 3 | 30 | -10 | 0 | 67 | |
| | Concrete Vibrator | C.4.33 | 106 | 78 | 30% | -5 | 1 | 0 | 25 | -8 | 0 | 65 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 40% | -4 | 1 | 0 | 25 | -8 | -5 | 63 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 15 | -4 | 0 | 73 | | |
| Super-structure (Steel Frame & Timber Slabs) | Tower Crane - Steelwork | C.4.48 | 104 | 76 | 60% | -2 | 1 | 0 | 30 | -10 | 0 | 64 | 83 |
| | Powered Hand tools | D.7.77 | 110 | 82 | 60% | -2 | 1 | 0 | 25 | -8 | 0 | 72 | |
| | Pneumatic Torque Wrench | Mfr | 98 | 70 | 10% | -10 | 1 | 0 | 25 | -8 | 0 | 52 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 75% | -1 | 2 | 3 | 25 | -8 | 0 | 72 | |
| | Nail Gun | C.4.95 | 101 | 73 | 50% | -3 | 1 | 0 | 25 | -8 | 0 | 62 | |
| | Generator | C.4.83 | 102 | 74 | 30% | -5 | 1 | 0 | 25 | -8 | 0 | 61 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 30% | -5 | 1 | 0 | 25 | -8 | 0 | 77 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 60% | -2 | 2 | 3 | 25 | -8 | 0 | 77 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 75% | -1 | 2 | 3 | 25 | -8 | 0 | 74 | |
| | Bolt Tighteners pneumatic | Mfr | 98 | 70 | 75% | -1 | 2 | 3 | 25 | -8 | 0 | 64 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 15 | -4 | 0 | 73 | | |
| Cladding Installation | 2T Hoist | C.4.61 | 96 | 68 | 100% | 0 | 1 | 0 | 20 | -6 | 0 | 62 | 80 |
| | Hand tools | C.4.72 | 107 | 79 | 70% | -2 | 1 | 0 | 20 | -6 | 0 | 71 | |
| | Scaffolding Install | D.7.2 | 100 | 72 | 80% | -1 | 1 | 0 | 20 | -6 | 0 | 65 | |
| | Powered Hand tools | D.7.77 | 110 | 82 | 50% | -3 | 3 | 5 | 20 | -6 | 0 | 78 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 15 | -4 | 0 | 73 | |

Appendix B


| Table B.2. Predicted Airborne Noise Levels (L _{Aeq,10hours}) at Facades West of Site - Celcon House Offices | | | | | | | | | | | | | |
|---|-------------------------------|--------------|-----|-----------------------|------|-------------------|----------|---------------------|----------------------|---------------------|-------------------------------|---------------------------|--------------------|
| Activity | Plant/Equipment | BS5228 / Mfr | SWL | L _{Aeq} @10m | % On | % Time Correction | Quantity | Quantity Correction | Typical Distance (m) | Distance Correction | Possible Screening Correction | Predicted at Receptor dBA | Maximum Cumulative |
| Demolition | Hand tools | C.1.6 | 111 | 83 | 15% | -8 | 2 | 3 | 20 | -6 | 0 | 72 | 85 |
| | 16 T Excavators with breakers | C.1.9 | 118 | 90 | 60% | -2 | 2 | 3 | 20 | -6 | 0 | 85 | |
| | Delivery - Waste Collection | C.8.20 | 107 | 79 | 10% | -10 | 1 | 0 | 5 | 6 | 0 | 75 | |
| Sub-structure | 25T Excavator | C.2.19 | 105 | 77 | 30% | -5 | 1 | 0 | 20 | -6 | 0 | 66 | 85 |
| | 5T Excavator | C.2.25 | 97 | 69 | 50% | -3 | 2 | 3 | 20 | -6 | 0 | 63 | |
| | 5T Dumper | C.4.7 | 106 | 78 | 50% | -3 | 1 | 0 | 20 | -6 | 0 | 69 | |
| | Hand tools | C.3.31 | 101 | 73 | 15% | -8 | 3 | 5 | 20 | -6 | 0 | 64 | |
| | MP 5000s Piling Rigs | C.3.14 | 111 | 83 | 100% | 0 | 2 | 3 | 20 | -6 | 0 | 80 | |
| | Tower Crane | C.4.48 | 104 | 76 | 100% | 0 | 1 | 0 | 30 | -10 | 0 | 66 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | |
| Super-structure (Concrete Core) | Striking of Shuttering | D.6.49 | 106 | 78 | 50% | -3 | 3 | 5 | 20 | -6 | 0 | 74 | 85 |
| | Hand tools | C.4.72 | 107 | 79 | 5% | -13 | 1 | 0 | 20 | -6 | 0 | 60 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 50% | -3 | 1 | 0 | 20 | -6 | 0 | 69 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 5% | -13 | 1 | 0 | 20 | -6 | 0 | 71 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 40% | -4 | 1 | 0 | 20 | -6 | 0 | 74 | |
| | Tower Crane | C.4.48 | 104 | 76 | 60% | -2 | 2 | 3 | 30 | -10 | 0 | 67 | |
| | Concrete Vibrator | C.4.33 | 106 | 78 | 30% | -5 | 1 | 0 | 20 | -6 | 0 | 67 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 40% | -4 | 1 | 0 | 20 | -6 | 0 | 70 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | | |
| Super-structure (Steel Frame & Timber Slabs) | Tower Crane - Steelwork | C.4.48 | 104 | 76 | 60% | -2 | 1 | 0 | 30 | -10 | 0 | 64 | 86 |
| | Powered Hand tools | D.7.77 | 110 | 82 | 60% | -2 | 1 | 0 | 20 | -6 | 0 | 74 | |
| | Pneumatic Torque Wrench | Mfr | 98 | 70 | 10% | -10 | 1 | 0 | 20 | -6 | 0 | 54 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 75% | -1 | 2 | 3 | 20 | -6 | 0 | 74 | |
| | Nail Gun | C.4.95 | 101 | 73 | 50% | -3 | 1 | 0 | 20 | -6 | 0 | 64 | |
| | Generator | C.4.83 | 102 | 74 | 30% | -5 | 1 | 0 | 20 | -6 | 0 | 63 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 30% | -5 | 1 | 0 | 20 | -6 | 0 | 79 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 60% | -2 | 2 | 3 | 20 | -6 | 0 | 79 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 75% | -1 | 2 | 3 | 20 | -6 | 0 | 76 | |
| | Bolt Tighteners pneumatic | Mfr | 98 | 70 | 75% | -1 | 2 | 3 | 20 | -6 | 0 | 66 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | | |
| Cladding Installation | 2T Hoist | C.4.61 | 96 | 68 | 100% | 0 | 1 | 0 | 20 | -6 | 0 | 62 | 84 |
| | Hand tools | C.4.72 | 107 | 79 | 70% | -2 | 1 | 0 | 20 | -6 | 0 | 71 | |
| | Scaffolding Install | D.7.2 | 100 | 72 | 80% | -1 | 1 | 0 | 20 | -6 | 0 | 65 | |
| | Powered Hand tools | D.7.77 | 110 | 82 | 50% | -3 | 3 | 5 | 20 | -6 | 0 | 78 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | |

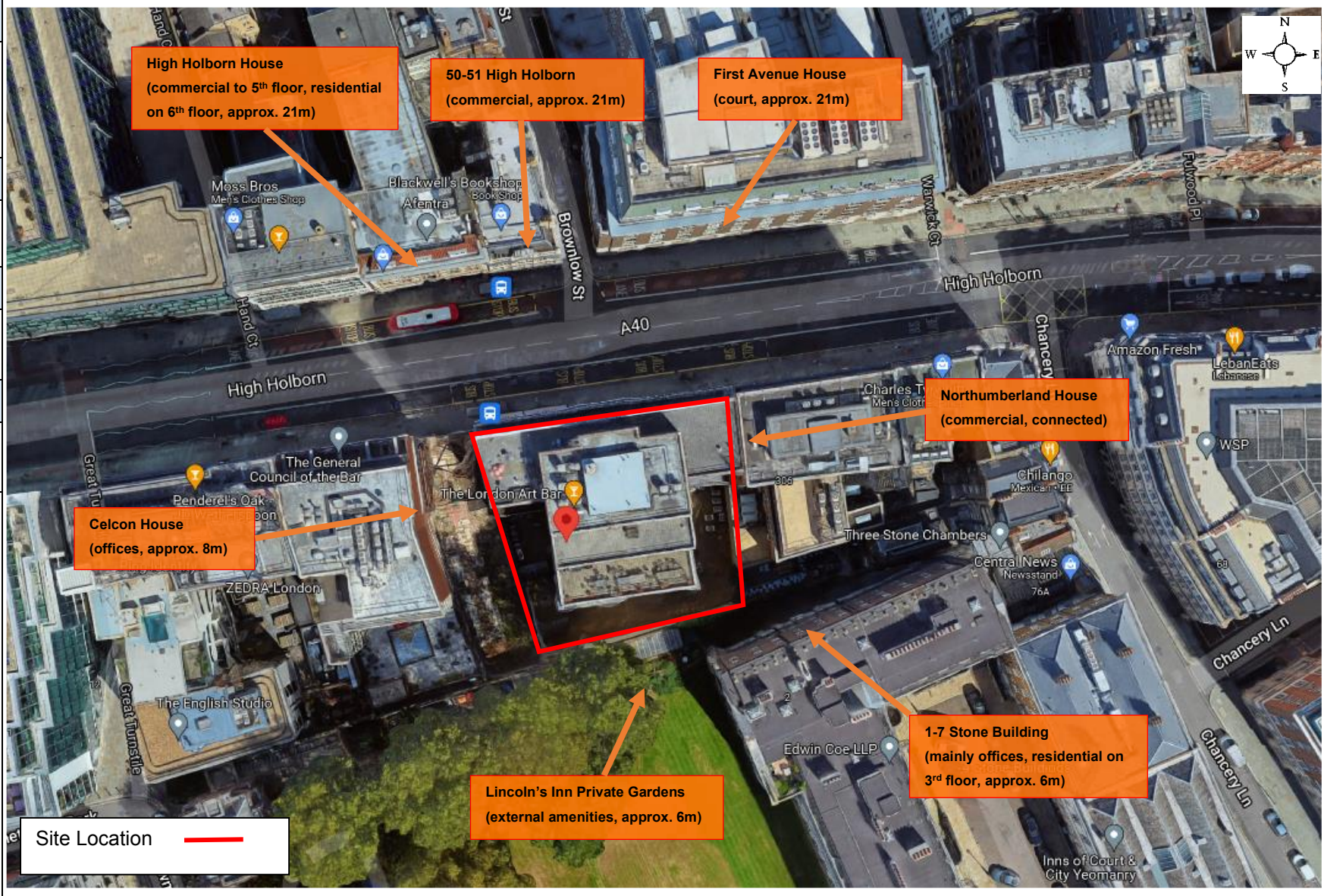
Appendix B


| Table B.3. Predicted Airborne Noise Levels (L _{Aeq,10hours}) at Facades East of Site - Northumberland House Commercial | | | | | | | | | | | | | |
|--|-------------------------------|--------------|-----|-----------------------|------|-------------------|----------|---------------------|----------------------|---------------------|-------------------------------|---------------------------|--------------------|
| Activity | Plant/Equipment | BS5228 / Mfr | SWL | L _{Aeq} @10m | % On | % Time Correction | Quantity | Quantity Correction | Typical Distance (m) | Distance Correction | Possible Screening Correction | Predicted at Receptor dBA | Maximum Cumulative |
| Demolition | Hand tools | C.1.6 | 111 | 83 | 15% | -8 | 2 | 3 | 15 | -4 | 0 | 74 | 88 |
| | 16 T Excavators with breakers | C.1.9 | 118 | 90 | 60% | -2 | 2 | 3 | 15 | -4 | 0 | 87 | |
| | Delivery - Waste Collection | C.8.20 | 107 | 79 | 10% | -10 | 1 | 0 | 5 | 6 | 0 | 75 | |
| Sub-structure | 25T Excavator | C.2.19 | 105 | 77 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 68 | 88 |
| | 5T Excavator | C.2.25 | 97 | 69 | 50% | -3 | 2 | 3 | 15 | -4 | 0 | 65 | |
| | 5T Dumper | C.4.7 | 106 | 78 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 71 | |
| | Hand tools | C.3.31 | 101 | 73 | 15% | -8 | 3 | 5 | 15 | -4 | 0 | 66 | |
| | MP 5000s Piling Rigs | C.3.14 | 111 | 83 | 100% | 0 | 2 | 3 | 15 | -4 | 0 | 82 | |
| | Tower Crane | C.4.48 | 104 | 76 | 100% | 0 | 1 | 0 | 5 | 6 | 0 | 82 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | | |
| Super-structure (Concrete Core) | Striking of Shuttering | D.6.49 | 106 | 78 | 50% | -3 | 3 | 5 | 15 | -4 | 0 | 76 | 87 |
| | Hand tools | C.4.72 | 107 | 79 | 5% | -13 | 1 | 0 | 15 | -4 | 0 | 62 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 71 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 5% | -13 | 1 | 0 | 15 | -4 | 0 | 73 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 40% | -4 | 1 | 0 | 15 | -4 | 0 | 76 | |
| | Tower Crane | C.4.48 | 104 | 76 | 60% | -2 | 2 | 3 | 5 | 6 | 0 | 83 | |
| | Concrete Vibrator | C.4.33 | 106 | 78 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 69 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 40% | -4 | 1 | 0 | 15 | -4 | 0 | 72 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | | |
| Super-structure (Steel Frame & Timber Slabs) | Tower Crane - Steelwork | C.4.48 | 104 | 76 | 60% | -2 | 1 | 0 | 5 | 6 | 0 | 80 | 89 |
| | Powered Hand tools | D.7.77 | 110 | 82 | 60% | -2 | 1 | 0 | 15 | -4 | 0 | 76 | |
| | Pneumatic Torque Wrench | Mfr | 98 | 70 | 10% | -10 | 1 | 0 | 15 | -4 | 0 | 56 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 76 | |
| | Nail Gun | C.4.95 | 101 | 73 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 66 | |
| | Generator | C.4.83 | 102 | 74 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 65 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 81 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 60% | -2 | 2 | 3 | 15 | -4 | 0 | 81 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 78 | |
| | Bolt Tighteners pneumatic | Mfr | 98 | 70 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 68 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | | |
| Cladding Installation | 2T Hoist | C.4.61 | 96 | 68 | 100% | 0 | 1 | 0 | 15 | -4 | 0 | 64 | 85 |
| | Hand tools | C.4.72 | 107 | 79 | 70% | -2 | 1 | 0 | 15 | -4 | 0 | 74 | |
| | Scaffolding Install | D.7.2 | 100 | 72 | 80% | -1 | 1 | 0 | 15 | -4 | 0 | 68 | |
| | Powered Hand tools | D.7.77 | 110 | 82 | 50% | -3 | 3 | 5 | 15 | -4 | 0 | 80 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 5 | 6 | 0 | 83 | |

Appendix B

| Table B.4. Predicted Airborne Noise Levels (L _{Aeq,10hours}) at Facades South of Site - 1-7 Stone Buildings / Lincoln's Inn Private Gardens Offices / Residential / External Amenities | | | | | | | | | | | | | |
|--|-------------------------------|--------------|-----|-----------------------|------|-------------------|----------|---------------------|----------------------|---------------------|-------------------------------|---------------------------|--------------------|
| Activity | Plant/Equipment | BS5228 / Mfr | SWL | L _{Aeq} @10m | % On | % Time Correction | Quantity | Quantity Correction | Typical Distance (m) | Distance Correction | Possible Screening Correction | Predicted at Receptor dBA | Maximum Cumulative |
| Demolition | Hand tools | C.1.6 | 111 | 83 | 15% | -8 | 2 | 3 | 15 | -4 | 0 | 74 | 87 |
| | 16 T Excavators with breakers | C.1.9 | 118 | 90 | 60% | -2 | 2 | 3 | 15 | -4 | 0 | 87 | |
| | Delivery - Waste Collection | C.8.20 | 107 | 79 | 10% | -10 | 1 | 0 | 35 | -11 | -15 | 43 | |
| Sub-structure | 25T Excavator | C.2.19 | 105 | 77 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 68 | 83 |
| | 5T Excavator | C.2.25 | 97 | 69 | 50% | -3 | 2 | 3 | 15 | -4 | 0 | 65 | |
| | 5T Dumper | C.4.7 | 106 | 78 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 71 | |
| | Hand tools | C.3.31 | 101 | 73 | 15% | -8 | 3 | 5 | 15 | -4 | 0 | 66 | |
| | MP 5000s Piling Rigs | C.3.14 | 111 | 83 | 100% | 0 | 2 | 3 | 15 | -4 | 0 | 82 | |
| | Tower Crane | C.4.48 | 104 | 76 | 100% | 0 | 1 | 0 | 20 | -6 | 0 | 70 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 35 | -11 | -15 | 51 | |
| Super-structure (Concrete Core) | Striking of Shuttering | D.6.49 | 106 | 78 | 50% | -3 | 3 | 5 | 15 | -4 | 0 | 76 | 82 |
| | Hand tools | C.4.72 | 107 | 79 | 5% | -13 | 1 | 0 | 15 | -4 | 0 | 62 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 71 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 5% | -13 | 1 | 0 | 15 | -4 | 0 | 73 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 40% | -4 | 1 | 0 | 15 | -4 | 0 | 76 | |
| | Tower Crane | C.4.48 | 104 | 76 | 60% | -2 | 2 | 3 | 20 | -6 | 0 | 71 | |
| | Concrete Vibrator | C.4.33 | 106 | 78 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 69 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 40% | -4 | 1 | 0 | 15 | -4 | 0 | 72 | |
| Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 35 | -11 | -15 | 51 | | |
| Super-structure (Steel Frame & Timber Slabs) | Tower Crane - Steelwork | C.4.48 | 104 | 76 | 60% | -2 | 1 | 0 | 20 | -6 | 0 | 68 | 86 |
| | Powered Hand tools | D.7.77 | 110 | 82 | 60% | -2 | 1 | 0 | 15 | -4 | 0 | 76 | |
| | Pneumatic Torque Wrench | Mfr | 98 | 70 | 10% | -10 | 1 | 0 | 15 | -4 | 0 | 56 | |
| | Concrete Pump | C.3.25 | 106 | 78 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 76 | |
| | Nail Gun | C.4.95 | 101 | 73 | 50% | -3 | 1 | 0 | 15 | -4 | 0 | 66 | |
| | Generator | C.4.83 | 102 | 74 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 65 | |
| | Reinforcement Being Installed | D.6.14 | 118 | 90 | 30% | -5 | 1 | 0 | 15 | -4 | 0 | 81 | |
| | Disc Cutter | D.6.53 | 112 | 84 | 60% | -2 | 2 | 3 | 15 | -4 | 0 | 81 | |
| | Concrete Wagon | C.4.20 | 108 | 80 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 78 | |
| | Bolt Tighteners pneumatic | Mfr | 98 | 70 | 75% | -1 | 2 | 3 | 15 | -4 | 0 | 68 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 35 | -11 | -15 | 51 | |
| Cladding Installation | 2T Hoist | C.4.61 | 96 | 68 | 100% | 0 | 1 | 0 | 6 | 4 | 0 | 72 | 89 |
| | Hand tools | C.4.72 | 107 | 79 | 70% | -2 | 1 | 0 | 6 | 4 | 0 | 82 | |
| | Scaffolding Install | D.7.2 | 100 | 72 | 80% | -1 | 1 | 0 | 6 | 4 | 0 | 75 | |
| | Powered Hand tools | D.7.77 | 110 | 82 | 50% | -3 | 3 | 5 | 6 | 4 | 0 | 88 | |
| | Delivery | C.2.34 | 108 | 80 | 10% | -10 | 5 | 7 | 35 | -11 | -15 | 51 | |

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|--|
| Title: |
| Location Plan |
| Project: |
| Lincoln House |
| Figure: |
| 29389/LP1 |
| Scale: |
| Not To Scale |
|  <p>Hann Tucker Associates Consultants in Acoustics Noise & Vibration</p> <p>Duke House, 1-2 Duke Street, Woking Surrey GU21 5BA (t) + 44 (0) 1483 770595 (e) enquiries@hanntucker.co.uk (w) hanntucker.co.uk</p> |



| | |
|--|---|
| Title: | Site Plan Showing Proposed Monitoring Positions |
| Project: | Lincoln House |
| Figure: | 29389/SP1 |
| Scale: | Not To Scale |
|  <p>Hann Tucker Associates Consultants in Acoustics Noise & Vibration</p> <p>Duke House, 1-2 Duke Street, Woking Surrey GU21 5BA (t) + 44 (0) 1483 770595 (e) enquiries@hanntucker.co.uk (w) hanntucker.co.uk</p> | |

