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Environmental Noise Risk Assessment

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1 - 7 Hargrave Place, London, N7 0PB

Issue	Description	Approved By	Signed	Date
1	Draft	Bill Rogerson	W Rogerson	11/01/15
2	First Issue	Bill Rogerson	W Rogerson	19/01/15
3	Second Issue	Bill Rogerson	W Rogerson	25/05/16

CONTENTS

1. Introduction

Bill Rogerson Safety Services Ltd has been instructed by AC Union Ltd to provide a Generic Noise report to support the planning application for the demolition and construction works at 1 – 7 Hargreaves Place.

2. Scope of the Report

The report is written as a short executive summary with additional supporting detail in Table 1.

3. Site Description

The site is situated between an Apartment block and a disused Public House on Hargrave Place, Camden, London. There is a Metal frame structure with steel framed roof that is to be removed and replaced with a commercial and domestic units spread over 4 floors.

4. Local Authority Discussions

This report is a generic report so Bill Rogerson Safety Services Ltd has not contacted the Local Authority.

5. Test Procedure

Specific source levels were unable to be recorded at the proposed site and thus the potential levels from the work equipment have been estimated using the appropriate HSE guidance. The estimated source levels are then used to assess the potential environmental noise impact likely to occur. It should be clearly noted that this report is generic and not specific to the site covered by the current application.

6. Calculations

The equipment noise levels at the assessment position are calculated from the manufacturers data.

There are many factors which affect the level of noise which reaches any given point, but the most important, over which there is generally some control is distance

For most sources a doubling of the distance results in a 6 dBA fall in level; conversely halving the distance, produces a 6 dBA rise. For example if you are 5m from a noise source, then moving another 5m away, should make a large difference to the measured noise level; conversely if you

are 500m away from the noise source, than a 5m change in distance will make no difference.

The above was used to determine the potential noise levels from plant and equipment that are proposed to be used on site during the project.

These are outlined in Table 1

7. Assessments

BS4142:1997

An assessment is undertaken to determine the likelihood of complaints.

Planning and Policy Guidance

An assessment is undertaken to determine if planning permission should be granted.

8. Conclusion

As long as the equipment is positioned within the site and not within 9 metres of the site boundary it is unlikely that the work stated will have an adverse effect on the local community in terms of noise.

9. Recommended Conditions

The Construction works should only be undertaken between 08:00 and 18:00 Monday to Friday and 08:00 and 13:00 on Saturdays .No Sunday works is allowed.

10. Reason for Estimating Background Levels

Upon the instruction of AC Union a generic report has been compiled and no specific site layout or background measurements have been made.

11. Proposed demolition and construction scope of works.

11.1 Demolition

Demolition activities to be undertaken during the project include but not limited to

1. The removal of a steel framed roof
2. The demolition of a metal frame structure
3. Removal of all waste

Given the work being undertaken and the methods adopted, it is considered overall that the

magnitude of potential noise emissions from the demolition works would be low for the site

11.2 Earthworks

Earthworks undertaken prior to construction would mainly involve the excavation of topsoil and subsoil from the working areas. The soil would be removed and then stored separately within designated storage areas or removed from site. It is considered that the number of wagons for transporting of waste etc would not be potentially high. It is therefore considered that the magnitude of potential noise emissions from the earthworks and removal of waste would be low for the site.

11.3 Construction

Constructionworkswould include (but not limited to);

4. Cap piling
5. Installation of ground beams
6. Installation of steel columns
7. Installation of metal deck flooring
8. Brickwork
9. Installation of Roof
10. Internal fit out

Given the work being undertaken and the methods adopted, it is considered overall that the magnitude of potential noise emissions from the construction works would be low for the site

12 SOURCE LEVELS

12.1 Description of Source

Unfortunately, due to the nature of construction works, noise is inevitable and can rarely be completely prevented. However, noise from construction sites can be very disturbing, particularly if it is a development that takes a considerable length of time. Noise comes from the operation of plant, machinery and power tools, the movement of vehicles and deliveries of materials.
The construction site is going to have numerous sources of equipment that produce noise and these will range from hand power tools, generators and general demolition and construction works for example piling and deliveries

The construction work being undertaken at Hargrave Place will include, but not limited to, the use of the following plant and equipment

- Concrete Mixer
- Concrete Pump
- Crane Mobile

- Delivery Vehicles
- Dumper
- Excavator
- Saw

HSE guidance and the Manufacturers give details on the sound levels generated when using this plant and equipment. AC Union will use this information to ensure compliance with statutory noise levels

13. Proposed Hours of Construction works

The Site may operate 6 days per week between the following hours with no operation outside these hours.

Monday to Friday 08.00 - 18.00
Saturday 08.00 - 13.00

14. Recommended Controls

Noise from a building site is also covered by BS5228: 'Noise Control on Construction and Open Sites', and relevant European Union Directives.

All work (demolition and construction work) on site will thus meet the British Standard BS 5228: At all times we will do all we can to reduce noise and vibration

AC Union Ltd employs a Safety, Health and Environment Adviser who is trained and experienced in the use of noise monitoring equipment. He retains his own noise monitoring equipment and will regularly carry out monitoring checks during the course of demolition and construction, to ensure noise levels adjacent to the works are within specified limits. The sound level measurement instrument to be used will be the Pulsar Model 45 sound level meter (Class 1) and Pulsar Model 46 sound level meters (Class 2). These are very accurate, reliable, 'handheld' precision instruments that are especially suited to Noise at Work and Occupational & Industrial Hygiene applications

Should the noise measurement be identified as being above 85 decibels outside of the site boundary all work will cease until the relevant measures have been put in place to reduce the levels.

We understand the limitations of noisy works within a residential environment and will ensure all subcontractors are aware of the site restrictions on noisy work as detailed within subcontract orders and the site rules. We will identify any noisy activity, its location, the duration and any applicable control measures necessary to mitigate its effect.

AC Union is sensitive to the requirements of working alongside existing occupied premises. We recognise the importance of working closely with the Client's management team to ensure that they are informed in advance of any noisy or disruptive activities that we may be undertaking and to allow time for the agreement of any reasonable mitigation measures that may be required.

All works will be carried out following noise guidelines. Monday to Friday. No noisy works should be carried out on Sundays and Bank Holidays.

AC Union will action and establish communication, environmental site aspects and emergencies controls. We will hold environmental tool box talks, produce an environmental plan and review our sub-contractors impacts and produce full assessments of each activity which involve noise levels which are above normal. We will also ensure that the demolition works will only be carried out within normal working hours.

Our health and safety consultant will carry out noise level checks throughout the demolition to maintain the correct noise levels. Most of the demolition will be done within the building with windows and roofs left on. This will lower the impact of noise. AC Union will carry out a full pre-qualification check on all sub-contractors along with statements on their environmental policies to ensure compliance on maintaining noise levels and mitigation measures are met.

AC Union will respect any reasonable request to reduce the duration of noisy activities further if required. Contractors will be required to have all plant and tools fitted with either silencers or dampers so far as is practical and working methods will be regularly reviewed to ensure that nuisance to adjacent properties and residents is mitigated wherever practical.

Should noise levels reach 80dB (A) operatives will be informed of the risks to their hearing and supplied (if requested) with either appropriately attenuated ear defenders or earplugs.

Should noise levels reach 85dB (A) or above operatives will be informed of the risks to their hearing and supplied with appropriately attenuated ear defenders or earplugs and instructed to wear them during noisy operations. The contractors are to ensure compliance by carrying out regular active monitoring.

Our Health and Safety consultant will undertake noise surveys during their regular site inspections. However, operatives will be informed that as a general rule, if they need to raise their voice when standing 2 metres away from a noise source, it is too loud and hearing protection must be worn.

It is the buying policy of AC Union to ensure that the noise and vibration produced by work

equipment is considered together with the price when new purchases are made with a view to lowering the risk when equipment is used.

In addition to controlling working hours, there are some common steps for avoiding unnecessary construction noise:

- Carry out site reconnaissance and identifying noise sensitivity before finalising working methods (developer / lead contractor)
- Formally oblige subcontractors to take responsibility for controlling their noise
- Choose and make provision in costings for working methods (such as piling) and equipment (such as silenced generators and pneumatic machinery) that reflect the noise sensitivity of the site
- Phase demolition / construction work stages to minimise noise impacts
- Make a nominated person responsible for monitoring noise control and liaising with residents
- Inform residents in advance about particularly noisy works or any unavoidable works during antisocial hours
- We will use good management practices to reduce negative effects and increase beneficial effects on the environment by controlling noise, vibration or other nuisance which may cause offence to the local community or environment.
- Wherever possible, the site will be totally surrounded by fencing or hoarding to reduce the amount of noise that escapes from the site. The site gates will be controlled so that they are open long enough to allow vehicles to pass through but no loud noise can escape to the surrounding areas.
- Wherever possible, fixed items of construction machinery will be electrically powered rather than powered by diesel or petrol. Where this is not practical, we will take suitable measures such as acoustic enclosures.
- Vehicles and machinery we use for the work will be fitted with effective exhaust silencers, be maintained in good and efficient working order, and be used in a way that reduces noise as much as possible.
- We will use equipment which breaks concrete by pressure as far as is reasonably practical.
- Where practical, we will use hydraulic or electrical powered rotary drills and bursters to remove hard materials.
- Noisy machinery and equipment will be positioned as far away as practical from residential or other noise-sensitive properties and use barriers or proprietary acoustic barriers.
- We will take care when loading or unloading vehicles, dismantling scaffolding or moving materials to reduce the noise.

- All material and machinery that is delivered to the site, and any waste or other material that is to be removed, will be undertaken within the permitted hours.
- We will endeavour to ensure that all employees, subcontractors and people employed on the site will not cause unnecessary noise from their activities; for example, 'revving' vehicle engines, music from radios and shouting.
- You will ensure that subcontractors and other people employed in connection with the work are aware of and, where practical, to keep to these guidelines.

15. Guidance

The following documents provide useful advice to contractors about controlling construction noise:

- British Standard BS 5228 *'Noise and vibration control on construction and open sites'*, particularly Parts 1, 2 and 4 – a good design and management guide for control of noise and vibration.
- CIRIA Technical Note 138 *'Planning to reduce noise exposure in construction'* – a good source of guidance on design and assessment for noise control (ISBN 0 86017 317 8).
- CIRIA Practice Note SP38 *'The use of screens to reduce noise from sites'* – concise practical advice on use of acoustic screens to reduce site noise exposure at sensitive locations (ISBN 0 86017 253 8).
- CIRIA project report 70 *'How much noise do you make? A guide to assessing and managing noise from construction sites'* – an informally written booklet providing accessible advice on the assessment and control of site noise (no ISBN – please refer to CIRIA, tel. 0207 549 3300).

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Location Drawings

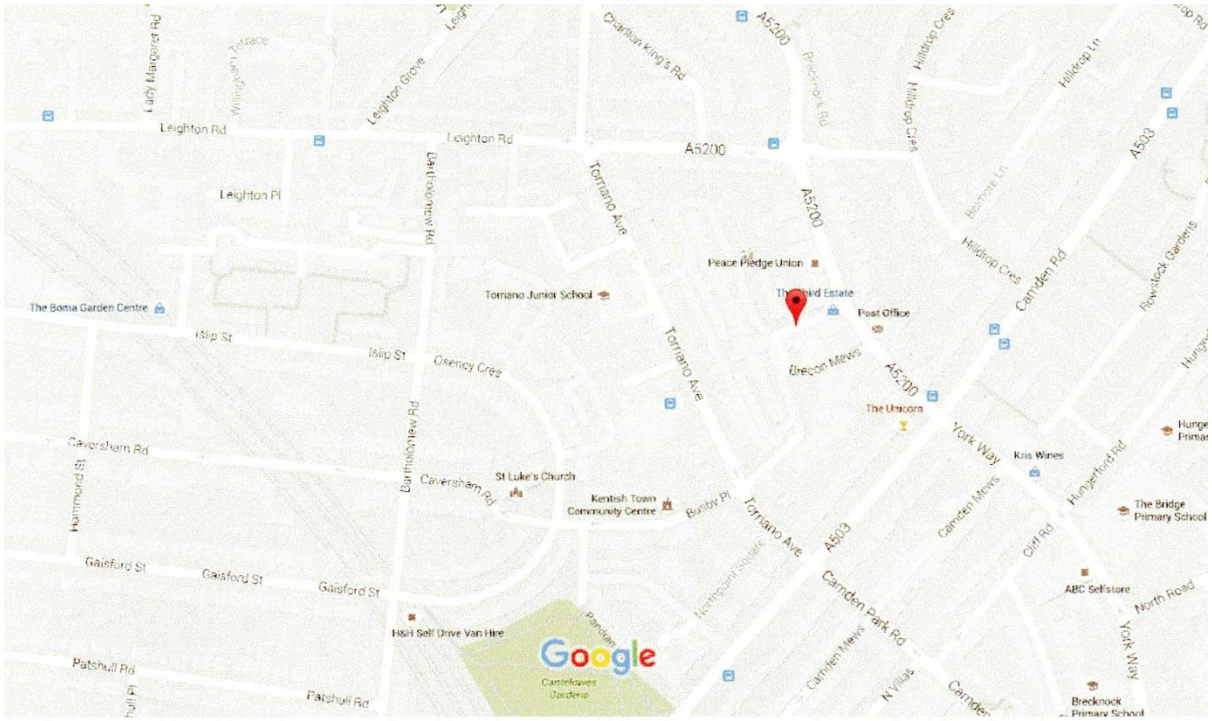


Table 1 Estimated Noise Levels

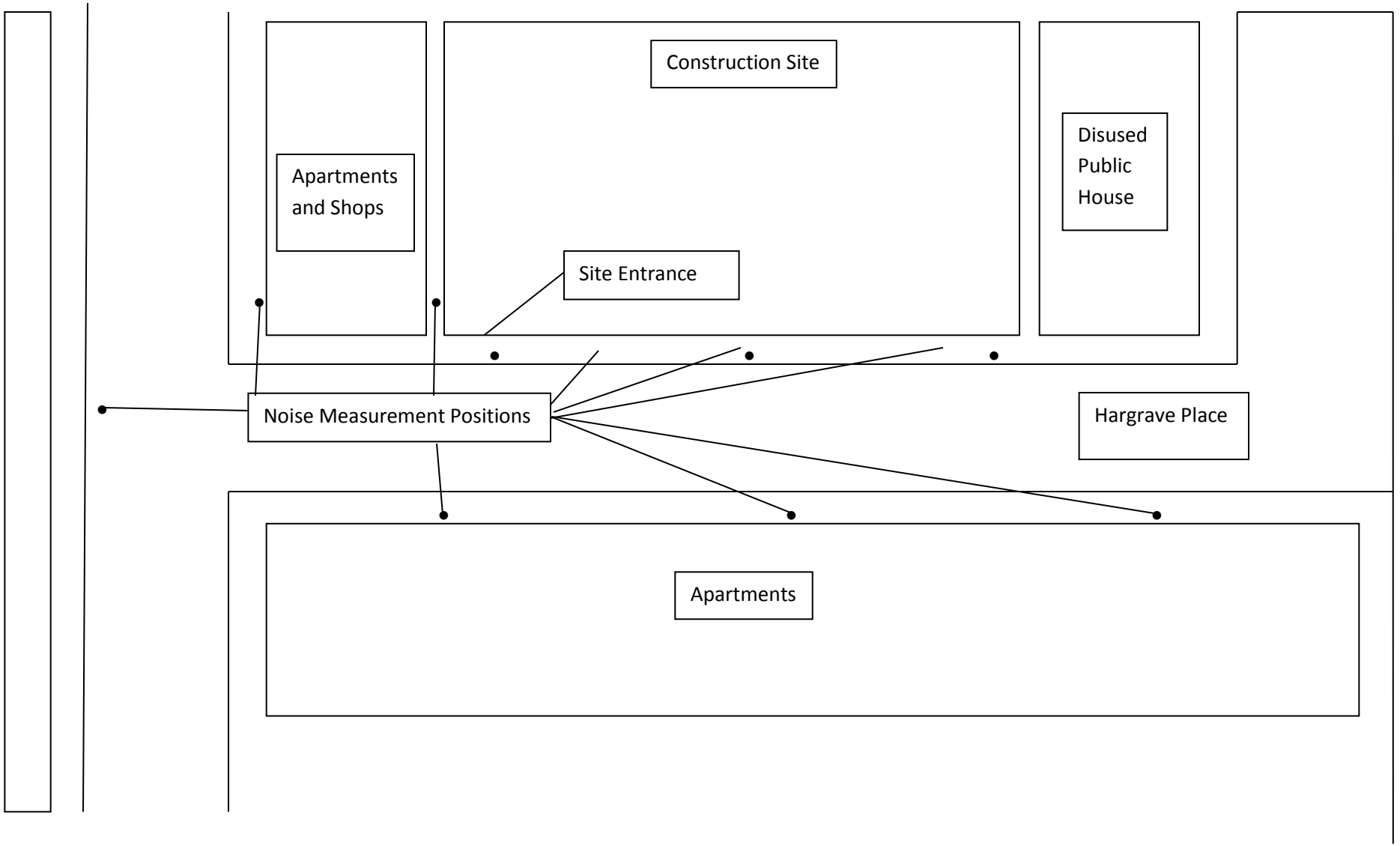
When dealing with a new or proposed noise LAeq is often used [also written dBA Leq]; this term is the Equivalent Continuous Level.

The formal definition is "when a noise varies over time, the Leq is the equivalent continuous sound which would contain the same sound energy as the time varying sound". However, you can think of it as a type of average, where noisy events have a significant influence. Using information from BS 5228 the noise levels set out below were identified.

The noise at 24m outside the boundary of the site is estimated with the noise source position 9m from the boundary fence.

Work Equipment	Noise at Source	Noise at Boundary when equipment is positioned 6m away	Noise at Boundary when equipment is positioned 12m away	Noise at Boundary when equipment is positioned 18m away	Noise at 24m outside of Boundary
Backhoe	85dB Leq	82dB Leq	79dB Leq	76dB Leq	71dB Leq
Compactor	87dB Leq	84dB Leq	81dB Leq	78dB Leq	73dB Leq
Concrete Pump	87dB Leq	84dB Leq	81dB Leq	78dB Leq	73dB Leq
Crane Mobile	88dB Leq	85dB Leq	82dB Leq	79dB Leq	74dB Leq
Dumper	90dB Leq	87dB Leq	84dB Leq	81dB Leq	76dB Leq
Excavator	90dB Leq	87dB Leq	84dB Leq	81dB Leq	76dB Leq
Loader	90dB Leq	87dB Leq	84dB Leq	81dB Leq	76dB Leq
Pump	81dB Leq	78dB Leq	75dB Leq	72dB Leq	67dB Leq
Saw	81dB Leq	78dB Leq	75dB Leq	72dB Leq	67dB Leq
Delivery Vehicle	80dB Leq	77dB Leq	74dB Leq	71dB Leq	66dB Leq

Site Plan


Construction Site
Apartments and Shops
Disused Public House
Site Entrance
Noise Measurement Positions
Hargrave Place
Apartments