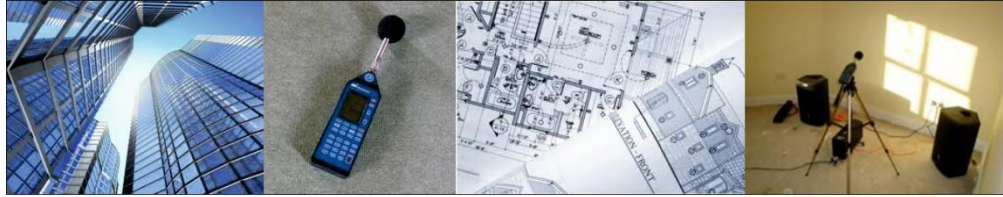


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**156 WEST END LANE
WEST HAMPSTEAD
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NOISE & ACOUSTIC ASSESSMENT
v.4

Client:
WESTFIELDS CONSTRUCTION LIMITED
39 Harrington Gardens
London
SW7 4JU

5 October 2020
Ref: M4720-CP

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Project Reference	M4720-CP
Issue No.	4
Author	Richard Sharland
Signature	
Reviewed	Eddie Oxborough
Signature	
Date	5 October 2020

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1. SUMMARY

- 1.1 An acoustic appraisal has been conducted for Westfields Construction Limited at West End Lane, West Hampstead (Figure 1). The project comprises the demolition of the existing office building and then the construction of two new mixed-use buildings (Figure 2).
- 1.2 The demolition works will involve the use of a large mobile crushing plant, to be located along the southern boundary of the site (Figure 3).
- 1.3 Concern has been expressed regarding the likely noise emissions from this equipment, and this report will provide an assessment of the likely impact on the neighbouring residents, and discuss options for amelioration.

2. ASSESSMENT OF DEMOLITION & CONSTRUCTION NOISE

- 2.1 Reference here is made to the Demolition Management Plan for Phases 1 & 2 of the project, submitted to and approved by Camden Council on the 21st February 2020.
- 2.2 This confirmed that noise emissions would not exceed 75 dB(A) $L_{Aeq, 10 \text{ hrs}}$.
- 2.3 It is assumed that a similar noise limit will be acceptable for the current phase of works.
- 2.4 To assess the likely noise affecting adjacent noise sensitive residents, calculations have been undertaken to consider the effect at the following locations the façade of the nearest properties to the proposed Crusher Location (see Figure 3).

3. PREDICTION OF CRUSHER PLANT NOISE

- 3.1 The proposed crushing plant in a tracked Sandvik QJ241 Jaw Crusher, rated at 168 kW.
- 3.2 Reference to the manufacturer's operating manual indicates that the typical noise levels 7m to the sides of the unit would 85 dB(A).
- 3.3 Figure 3 indicates the proposed location of the crusher on the site, sunk 0.5 – 1m into the ground. Figure 4 provides a section through the site, which also shows the relative location of the residential properties to the north. It is likely that, for much of the works, the control of noise emissions will benefit from a significant spoil heap located to the side of the plant. However, for the purposes of this assessment, no attenuation effects have been included. Therefore, the predictions may be taken to be a pessimistic indication.
- 3.4 The distance from the proposed location to the rear façade of properties on Lymington Road is c.35m. This will equate to a distance correction of -14 dB(A), compared to the 7m reference measurement.
- 3.5 Allowing for the reflection of noise at the facade, the predicted noise level at the nearest residential property is **74 dB(A) $L_{Aeq, t}$** .
- 3.6 If the crusher operates for a full 10 hours in the day, a most pessimistic assumption, the overall noise level would be 74 dB(A) $L_{Aeq, 10 \text{ hrs}}$. If were to operate for only 5 hrs, the overall noise level would be 71 dB(A) $L_{Aeq, 10 \text{ hrs}}$.
- 3.7 **It can therefore be seen that the predicted noise levels would be within the 75 dB(A) $L_{Aeq, 10 \text{ hrs}}$ limit.**
- 3.8 Notwithstanding this numerically compliant prediction, Section 4 of the report will outline the good practice guidelines which should be applied to this and all demolition sites.

4. NOISE MITIGATION

- 4.1 BS5228:2009 provides detailed guidelines for the mitigation of noise from construction and demolition sites. The following paragraphs will describe the measures which should be considered and, where practicable, adopted.
- 4.2 Community relations - Good relations with neighbouring occupiers should be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. The extract below provides an example of how the contractor might set out their liaison with neighbours:

Neighbouring Properties

Establishing and maintaining good relationships with the neighbouring properties will be key on this project and the following procedures will be put into place:

- We will look to implement a series of initial engagement meetings with the neighbours.
 - We will deliver leaflets inviting residents and local businesses to public meetings, encouraging them to raise any concerns with our team. Following these we will hold drop in sessions on site for residents to pop in during the construction works.
 - We will also appoint a dedicated point of contact that residents can communicate with as well as provide regular newsletters, keeping residents and local businesses informed of upcoming works and site progress.
 - Contact information and update notices will be displayed on the site hoardings and gates. Should there be any complaints or concerns from the neighbours we will encourage them to contact our dedicated point of contact. We will always try and resolve or reassure them at site level in the first instance.
- 4.3 Noise and persons on site - All operatives should be trained to employ appropriate techniques to keep site noise to a minimum, and should be supervised to ensure that best working practice in respect of noise reduction is followed. Training should include:
- a) the proper use and maintenance of the crusher plant;
 - b) the positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel. *In this instance, the crushing plant has been set to the most efficient operational location;*
 - c) the avoidance of unnecessary noise when carrying out manual operations and when operating the plant;
 - d) the protection of persons against noise;
 - e) the operation of sound measuring equipment (selected personnel).
- 4.4 Project supervision - The intention here is minimize levels of site noise wherever possible (whilst having due regard to the practicability and economic implication of any proposed control or mitigation measures).
- 4.5 The project methodology will be designed to minimise the number of operations likely to be particularly disturbing as far as is possible within the constraints of the project.

- 4.6 Contractors will select the most appropriate plant to minimise overall noise impact, with due regard to:
- a) site layout, e.g. location of static noise sources;
 - b) use of site buildings, material dumps, etc., as ad hoc barriers;
 - c) the types of machinery to be used and whether alternative types or techniques would achieve less disturbance.
- 4.7 *With specific reference to Para. 4.6, the Client and subcontractor have confirmed the plant selection to be the quietest available to them for the processes concerned.*
- 4.8 All available techniques will be used to minimize, as far as is appropriate, the level of noise to which operators and others in the neighbourhood of site operations will be exposed. Measures may include the following:
- a) The hours of working are planned with due regard to the effects of noise upon persons in areas surrounding site operations, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods. Respite hours during the day should be considered
 - b) As stated before, wherever reasonably practicable, the quietest working methods will be employed, including use of the most suitable plant, reasonable hours of working for noisy operations, and economy and speed of operations.
 - c) As required, noise source will be controlled at source
 - d) On-site noise levels will be monitored regularly, particularly if changes in machinery or project designs are introduced, by a suitably qualified person appointed specifically for the purpose (see below)
- 4.9 All equipment will be switched off when not in use (particularly the loaders), and vehicles drivers will be advised not to rev engines unnecessarily.
- 4.10 Materials will be lowered whenever practicable rather than be dropped. The surfaces on to which the materials are dropped will be covered by a resilient material.
- 4.11 Plant and vehicles will be started sequentially rather than all together.
- 4.12 Audible reversing warning systems on mobile plant and vehicles should be of a type which, whilst ensuring that they give proper warning, have a minimum noise impact on persons outside sites.
- 4.13 All plant and equipment will be regularly maintained by trained personnel.

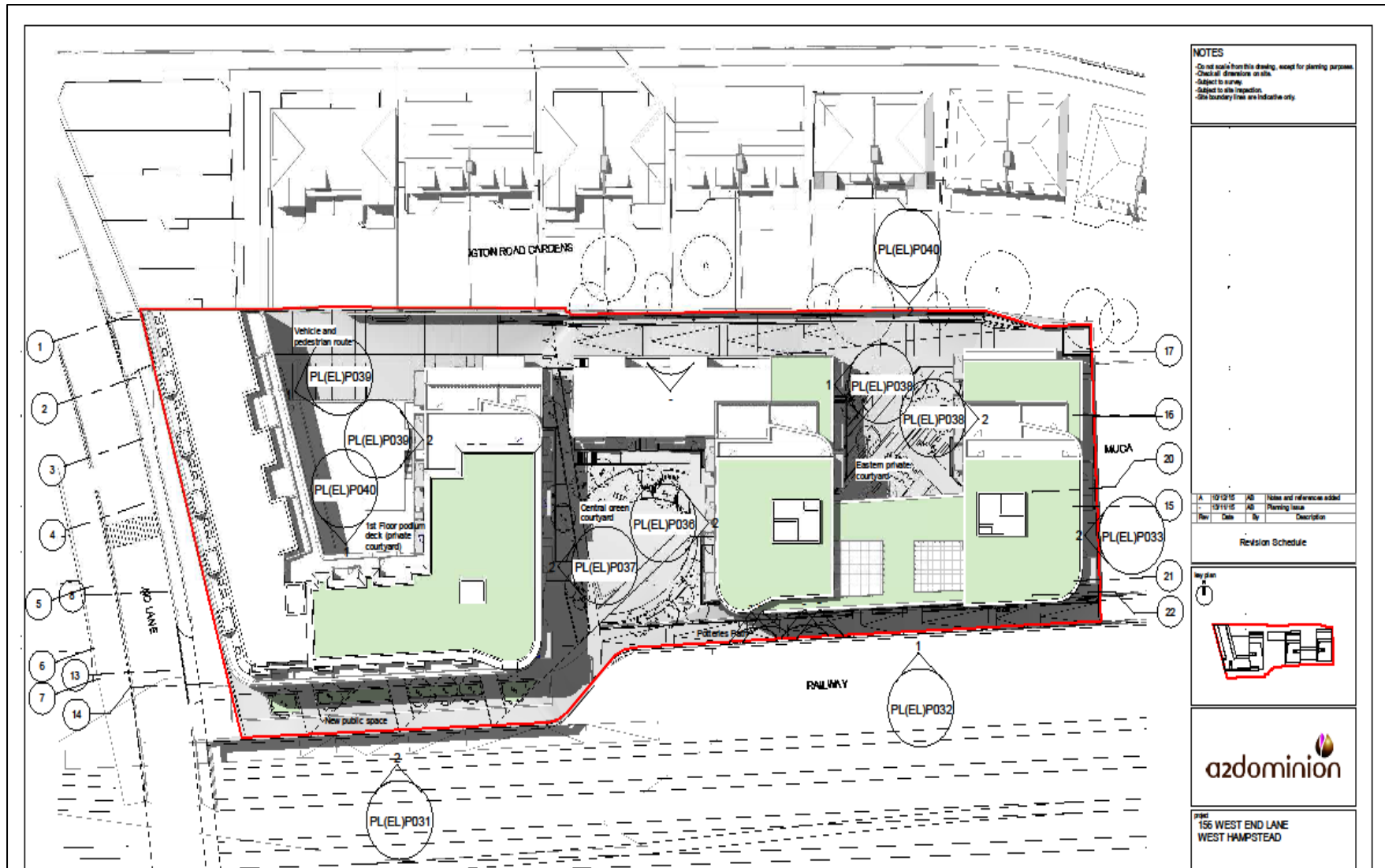
5. NOISE MONITORING

- 5.1 It may be appropriate to consider adhoc noise monitoring on the site boundary, during the crushing phase of works. This would provide supporting information in the event of dispute.
- 5.2 The site team should be equipped with a Type 1 or Type 2 precision sound level meter, capable of recording time-averaged sound pressure levels in overall dB(A). The meter shall be accompanied by a Calibrator, and both items shall be kept within a valid calibration cycle for the duration of the project.
- 5.3 A trained operative shall take sample measures at positions on each site boundary (as close to noise sensitive neighbours as possible) for a 20 minute period at least once per week. The samples should aim to capture a representative sample of the typical crushing activity
- 5.4 Additional measurements may be taken at key times when particularly noisy activity may be taking place.
- 5.5 Formal records of the noise recordings, and contemporaneous observations, should be kept. The following information should be recorded:
 - (a) The measured values of L_{Aeq} and, where appropriate, $L_{Amax, f}$, together with details of the relevant time periods;
 - (b) Details of the instrumentation and measurement methods used, including details of any sampling techniques, position of the microphone in relation to the site and system calibration data:
 - (c) Any factors that might have adversely affected the reliability or accuracy of the measurements;
 - (d) Plans of the site and neighbourhood showing the position of plant, associated buildings and notes of site activities during the monitoring periods:
 - (e) Notes on weather conditions, including where relevant, wind speed/direction, temperature, rain etc
 - (f) Time, date and name of person carrying out the measurement.
- 5.6 Should any unexpectedly high levels be recorded, attributed to a particular activity or process, or if complaints are received from neighbouring occupiers, further noise control measures may be required.

FIGURE 1 – WEST END LANE SITE LOCATION



FIGURE 2 – PROPOSED SITE LAYOUT



NOTES

- Do not scale from this drawing, except for planning purposes.
- Check all dimensions on site.
- Subject to survey.
- Subject to site inspection.
- Site boundary lines are indicative only.

Rev	Date	By	Description
A	10/12/15	AB	Notes and references added
	13/11/15	AB	Planning issues

Revision Schedule

Rev	Date	By	Description
1			
2			
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156 WEST END LANE
WEST HAMPSTEAD

FIGURE 3 – PROPOSED SITE SET UP FOR CRUSHING PLANT



FIGURE 4 – PROPOSED SITE SECTION

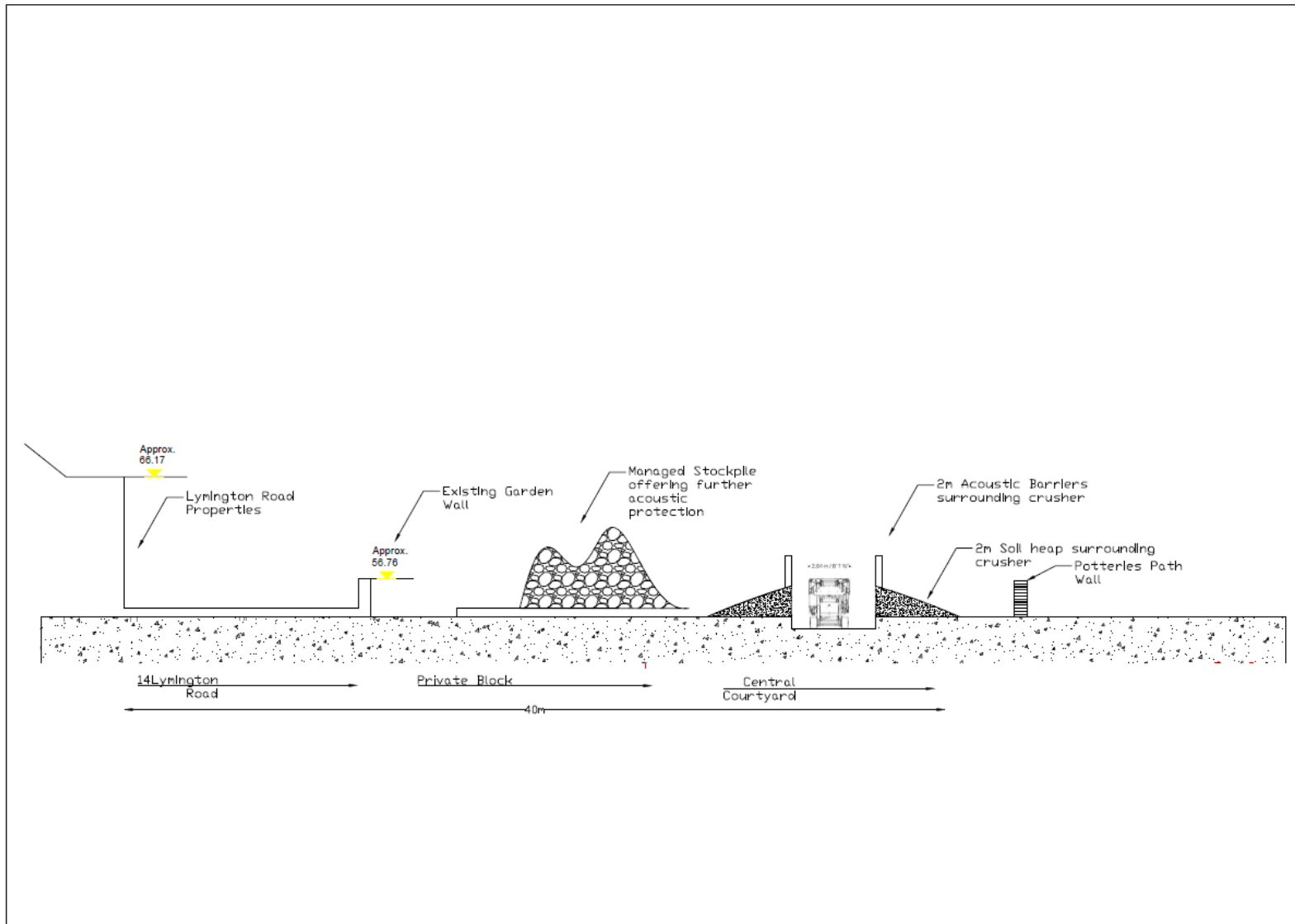


FIGURE 5 – MEASURED NOISE LEVELS ON NORTH BOUNDARY

