

**Report for – NW1 IOS I Unit Trust c/o Marchmont Investment
Management**

6 Streatham Common – Noise Impact Assessment

December 2023

Notes

Project No: 0221

Document No: 221-SVA-REP-02-02

Title: 6 Streatham Common – Noise Impact Assessment

Location: Streatham Common South, London SW16 3BT

Client: NW1 IOS 1 Unit Trust c/o Marchmont Investment Management
46 Berners St, London W1T 3NE

Issue Date: 05.12.23

Author: Matthew Light (MIOA)

Position: Principal Consultant

Reviewed and Authorised by: Matthew Hyden (FIOA)

Position: Director

1.0 Summary

- 1.1.1 A noise survey and impact assessment has been undertaken for the proposed open storage site at 6 Streatham Common South, London SW16 3BT.
- 1.1.2 The proposed site has previously been used as a builders yard and it is understood that the extant planning permission for the site places no restrictions on its use, in terms of either operational hours or noise emissions.
- 1.1.3 A noise modelling exercise has been undertaken and noise emissions for the previous (but currently permitted) use of the site have been compared to those from the proposed development. It has been found that the proposed development will represent a significant reduction in noise impact compared to the extant permitted use of the site.
- 1.1.4 Notwithstanding the above, the applicant is aware that Lambeth Council would like to limit operational hours on the site. It is therefore proposed that normal operations will only take place during the following hours:
- 07:00 to 19:00 hours Monday to Saturday
 - 09:00 to 18:00 hours Sundays and Bank Holidays
- 1.1.5 However, outside of these hours, it is proposed that reduced working to include limited deliveries, loading and unloading to the rear of the site, away from the nearest residential receptors could occur. The impact of these activities has been assessed in accordance with BS 4142 and it has been found that significant adverse noise impacts are unlikely to occur. It is also important to note that as the site is currently able to operate on an unrestricted basis, this would result in a significantly higher noise impact when compared to the limited out of hours work proposed as part of the development.
- 1.1.6 The assessment has been based on the proposed development operating in a similar fashion to the previous use. However, the proposed development will implement a noise management plan (to be agreed with Lambeth Council) and this will help further reduce noise emissions compared to the previous (currently permitted) use, that is understood to operate with little or no noise management practices in place.
- 1.1.7 In summary, it is considered that the proposed development will result in a significant reduction in noise emissions when compared to the previous permitted use of the site. In addition, adverse noise impacts will be minimised through the use of:
- Proposed limitations on hours of normal operations
 - Reduced operations outside of these hours; and
 - Implementation of a noise management plan (to be agreed with Lambeth Council)

2.0 Introduction

2.1 Background

2.1.1 SV Acoustics was commissioned by NW1 IOS 1 Unit Trust c/o Marchmont Investment Management (the Client) to undertake a noise impact assessment for the proposed open storage site (the proposed development) at 6 Streatham Common South, London SW16 3BT (the Site) within the London Borough of Lambeth (LBL).

2.2 Current Site and Proposed Development

2.2.1 The Site was previously used as a building materials yard by a builders' merchant. It is understood that extant permission for this site does not place any operational or noise related restrictions on the use of site (i.e., the site could currently operate 24 hrs a day).

2.2.2 The proposed development comprises the demolition of existing buildings and associated clearance and levelling of ground in connection with use of the site for open storage. The Site location can be seen in **Figure 1.1**.

Figure 1.1: Site Location



2.3 Purpose and Structure of this Report

2.3.1 The purpose of this report is to assess the potential noise impacts of the scheme in support of planning permission for the development.

2.3.2 This assessment is divided into the following sections:

- Planning Policy and Standards;
- Acoustic Character of Site and Baseline Noise Data;
- Construction Noise Assessment;
- Operational Noise Assessment; and
- Conclusions and Recommendations.

2.4 Purpose and Structure of this Report

2.4.1 This report presents SV Acoustics' observations, findings, and conclusions as they existed on the date that this report was issued. This report is subject to modification if SV Acoustics becomes aware of additional information after the date of this report that is material to its findings and conclusions.

2.4.2 The report has been prepared in line with the policy and guidance which is discussed within Section 2 of this report.

2.4.3 The reliability of information provided by others to SV Acoustics cannot be guaranteed to be accurate or complete. Performance of this assessment is intended to reduce, but not eliminate, uncertainty regarding environmental conditions associated with the subject site; therefore, the findings and conclusions made in this report should not be construed to warrant or guarantee the subject site, or express or imply, including without limitation, warranties as to its marketability for a particular use.

2.4.4 SV Acoustics found no reason to question the validity of information received unless explicitly noted elsewhere in this report.

3.0 Planning Policy and Standards

3.1 National Policy

National Planning Policy Framework, (NPPF, 2021)

3.1.1 The “National Planning Policy Framework” (NPPF) sets out the Government’s requirements for the planning system. Paragraph 174 of the NPPF advises:

“Planning policies and decisions should contribute to and enhance the natural and local environment by; preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of... noise pollution... Development should, wherever possible, help to improve local environmental conditions...”

3.1.2 With specific regard to noise, paragraph 185 of the NPPF states that:

“Planning policies and decisions should ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment [...] in so they should mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;”

3.1.3 With regard to the ‘adverse impacts’ referred to above, the NPPF directs the reader to the advice contained in DEFRA’s “Noise Policy Statement for England” (NPSE). This policy statement introduces the concept of a “Significant Observed Adverse Effect Level” (SOAEL), “Lowest Observed Adverse Effect Level” (LOAEL) and “No Observed Adverse Effect Level” (NOAEL). However, whilst the intent of the NPSE in relation to the NPPF is clear, the NPSE does not, at this time, provide any quantitative threshold values for each identified level of “effect.” Indeed, the NPSE carefully highlights that:

“It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.”

National Planning Practice Guidance (NPPG, 2019)

3.1.4 In February 2014 Planning Practice Guidance (PPG) was published, and was most recently updated in 2019. The overall aim of this guidance is to tie together the principles of the NPPF and the Explanatory Note of the Noise Policy Statement for England. The PPG states that:

“Plan-making and decision making need to take account of the acoustic environment and in doing so consider:

- *whether or not a significant adverse effect is occurring or likely to occur;*
- *whether or not an adverse effect is occurring or likely to occur; and*
- *whether or not a good standard of amenity can be achieved.”*

3.1.5 This includes:

“identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.”

3.1.6 A summary of the effects of noise exposure associated with both noise generating Proposed Developments and noise sensitive developments is presented within the NPPG and repeated as follows:

Table 3.1: NPSE Guidance

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level (NOAEL)			
Noticeable and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g., turning up volume of television; speaking more loudly; closing windows for some of the time because of the	Observed Adverse Effect	Mitigate and reduce to a minimum

Perception	Examples of Outcomes	Increasing Effect Level	Action
	noise. Potential for non-awakening sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.		
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g., having to keep windows closed most of the time, avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g., regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g., auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

3.1.7 In light of the above, it can be seen that whilst the NPPF and associated planning practice guidance sets out stringent imperatives to ensure the satisfactory development of land in relation to possible noise impacts, the NPPF does not generally provide any detailed technical guidance defining what may be considered to constitute a ‘significant’ or ‘other’ adverse impact. In the absence of such technical guidance, reference needs to be made to sustainable development standards set out in local planning policy and/or relevant industry standard guidance documents.

3.2 Local Policy

London Brough of Lambeth – Lambeth Local Plan (Adopted September 2021)

3.2.1 The Lambeth Local Plan, adopted in 2021, aims to meet a number of objectives, highlighting in its introduction the environmental objectives as follows:

“an environmental objective - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

3.2.2 The Lambeth Local Plan identifies environmental issues including noise as follows (from “Section 4: Delivering the Vision and Objectives”):

Policy D1: Delivery and Monitoring

A. *The council will deliver the spatial vision and strategic objectives of the Local Plan by:*

B. working with a range of partners to ensure sustainable development and regeneration opportunities are fully explored, including optimising the use of previously developed land and vacant buildings [...];

C. encouraging and supporting sustainable development that enhances the local distinctiveness of neighbourhoods [...] such as Stockwell [...].”

Policy D4: Planning Obligations

Section 106 planning obligations will be sought to: [...]

B. ensure that development proposals provide or fund local improvements to mitigate the impact of the development and/or additional facilities and requirements made necessary by the development. Depending on the nature of the development, this may include: [...]

iv. mitigation of noise impacts;”

3.2.3 The Lambeth Local Plan refers to ‘The London Plan 2021’ as:

“1.14 [...] Every London borough local plan must be in general conformity with the London Plan. The policies in the London Plan and in Lambeth’s Local Plan together constitute the statutory local development plan for the London Borough of Lambeth, along with neighbourhood development plans once made.

1.15 As with national policy, Lambeth’s Local Plan only elaborates on London Plan policy where this is considered necessary to meet local objectives and achieve local distinctiveness. Otherwise, cross-references are made to London Plan policies and these will be applied in addition to the policies in the revised Local Plan”

The London Plan

3.2.4 The London Plan refers to noise particularly in Policy D13 Agent of Change and Policy D14 Noise as follows:

Policy D13 Agent of Change

“A. The Agent of Change principle places the responsibility for mitigating impacts from existing noise and other nuisance-generating activities or uses on the proposed new noise-sensitive development. Boroughs should ensure that Development Plans and planning decisions reflect the Agent of Change principle and take account of existing noise and other nuisance-generating uses in a sensitive manner when new development is proposed nearby.

B. Development should be designed to ensure that established noise and other nuisance-generating uses remain viable and can continue or grow without unreasonable restrictions being placed on them.

C. New noise and other nuisance-generating development proposed close to residential and other noise-sensitive uses should put in place measures to mitigate and manage any noise impacts for neighbouring residents and businesses.

D. Development proposals should manage noise and other potential nuisances by:

- 1) ensuring good design mitigates and minimises existing and potential nuisances generated by existing uses and activities located in the area*
- 2) exploring mitigation measures early in the design stage, with necessary and appropriate provisions including ongoing and future management of mitigation measures secured through planning obligations*
- 3) separating new noise-sensitive development where possible from existing noise-generating businesses and uses through distance, screening, internal layout, sound-proofing, insulation and other acoustic design measures.*

E. Boroughs should not normally permit development proposals that have not clearly demonstrated how noise and other nuisances will be mitigated and managed.”

Policy D14 Noise

“A. In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by:

- 1) avoiding significant adverse noise impacts on health and quality of life*
- 2) reflecting the Agent of Change principle as set out in Policy D13 Agent of Change*
- 3) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on existing noise-generating uses*

4) improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity)

5) separating new noise-sensitive development from major noise sources (such as road, rail, air transport and some types of industrial use) through the use of distance, screening, layout, orientation, uses and materials – in preference to sole reliance on sound insulation

6) where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles

7) promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver.

B. Boroughs, and others with relevant responsibilities, should identify and nominate new Quiet Areas and protect existing Quiet Areas in line with the procedure in Defra's Noise Action Plan for Agglomerations.

3.14.1 The management of noise is about encouraging the right acoustic environment, both internal and external, in the right place at the right time. This is important to promote good health and a good quality of life within the wider context of achieving sustainable development. The management of noise should be an integral part of development proposals and considered as early as possible.

Managing noise includes improving and enhancing the acoustic environment and promoting appropriate soundscapes. This can mean allowing some places or certain times to become noisier within reason, whilst others become quieter. Consideration of existing noise sensitivity within an area is important to minimise potential conflicts of uses or activities, for example in relation to internationally important nature conservation sites which contain noise-sensitive wildlife species, or parks and green spaces affected by traffic noise and pollution. Boroughs, developers, businesses and other stakeholders should work collaboratively to identify the existing noise climate and other noise issues to ensure effective management and mitigation measures are achieved in new development proposals."

3.3 Relevant Guidance

BS 5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise

3.3.1 BS 5228 provides recommendations for methods of noise and vibration control relating to construction and open sites where work activities/operations generate significant noise and/or vibration levels. It also provides guidance on methods of predicting and measuring noise and assessing its impact on those exposed to it.

BS4142:2014: “Methods for Rating and Assessing Industrial and Commercial Sound”

- 3.3.2 BS 4142 provide a rating and assessment methodology for assessing the potential adverse impact of industrial and commercial noise sources on neighbouring dwellings.
- 3.3.3 The assessment procedure initially compares the ‘Rating Level’ of the source with the ‘Background Sound Level’ when the source is not present.
- 3.3.4 The ‘Rating Level’ (L_{Ar}) referred to is the specific sound level of the noise source under investigation (in terms of the L_{Aeq} noise index), to which corrections are applied if the noise has certain audible characteristics. The corrections (based on a subjective assessment of noise source characteristics) is given in **Table 2.2**.

Table 3.2: BS4142:2014 Character Correction for Rating Level Calculation.

Character Correction				
Feature / Perception	Tonality	Impulsivity	Intermittency	Other Acoustic Characteristics
Just Perceptible	+2 dB	+3 dB	When the specific sound has identifiable On/Off conditions that are readily distinctive. +3 dB	+3 dB
Clearly Perceptible	+4 dB	+6 dB		
Highly Perceptible	+6 dB	+9 dB		

- 3.3.5 The ‘Background Sound Level’ (L_{A90}) represents the noise level that is exceeded for 90% of the stated measurement period. For assessment purposes, the background noise level needs to be determined without the noise source under investigation operating.
- 3.3.6 The time of operation needs to be taken into account. During the day (normally taken to be 07.00 to 23.00 hours) a one-hour assessment period is considered appropriate. During the night (normally taken to be 23.00 – 07.00 hours) a 15-minute assessment time period is normally used.
- 3.3.7 The following guidance is then based on the outcome of this initial assessment:
 - A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

- The standard states that: “Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact,”
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

3.3.8 A note accompanying the above guidance from BS4142 states:

“Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.”

3.3.9 The initial estimate of the impact should then be modified to account for its context. Such considerations include:

- The absolute level of the sound - the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low. Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.
- Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.
- The character and level of the residual sound compared to the character and level of the specific sound.
- The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

BS8233:2014: Guidance on sound insulation and noise reduction for buildings

3.3.10 BS8233:2014 “Sound Insulation and Noise Reduction for Buildings” offers design guidance for indoor ambient noise levels within dwellings, set out in **Table 3.3**.

Table 3.3: BS8233:2014 Indoor Ambient Noise Level Design Guidance.

Activity	Location	07.00 – 23.00 hours	23.00 – 07.00 hours
Resting	Living Room	35dB LAeq,16hour	--
Dining	Dining Room/Area	40dB LAeq,16hour	--

Activity	Location	07.00 – 23.00 hours	23.00 – 07.00 hours
Sleeping (daytime resting)	Bedroom	35dB LAeq,16hour	30dB LAeq,8hour

3.3.11 Note 4 to the above Table states:

“Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax, F depending on the character and number of events per night. Sporadic noise events could require separate values.”

WHO “Guidelines for Community Noise” (World Health Organisation, 1999)

3.3.12 The criteria outlined in this document provide a summary of research regarding the effects of noise on the community. Section 2 of the Guidelines presents a general discussion regarding the types of noise affecting communities and their measurement. The guidelines promote the use of the LAeq,T noise index. However, where there are distinct events to the noise, such as with aircraft or railway noise, the guidelines recommend that measures of the individual events should be obtained (using, for example, LAmax or LAE), in addition to LAeq,T measurements.

3.3.13 The guidelines identify the following critical effects of noise on residential dwellings – annoyance and sleep disturbance.

3.3.14 With regard to ‘annoyance’, section 3.8 of the Guidelines states:

“Annoyance in populations exposed to environmental noise varies not only with the acoustical characteristics of the noise (source, exposure), but also with many non-acoustical factors of social, psychological, or economic nature. These factors include fear associated with the noise source, conviction that the noise could be reduced by third parties, individual noise sensitivity, the degree to which an individual feels able to control the noise (coping strategies) and whether the noise originates from important economic activity.”

3.3.15 Section 4.2.7 of the Guidelines further states that:

“The annoyance response to noise is affected by several factors, including the equivalent sound pressure level and the highest sound pressure level of the noise, the number of such events, and the time of day. Methods for combining these effects have been extensively studied. The results are not inconsistent with the simple, physically based energy equivalent energy theory, which is represented by the LAeq noise index. During the daytime, few people are seriously annoyed by activities with LAeq levels below 55dB; or moderately annoyed with LAeq levels below 50dB.”

3.3.16 With regard to ‘**sleep disturbance**’, Section 3.4 of the guidelines states:

“If negative effects on sleep are to be avoided the equivalent sound pressure level should not exceed 30dB(A) indoors for continuous noise. If the noise is not continuous, sleep disturbance correlates best with L_{Amax} and effects have been observed at 45dB or less. This is particularly true if the background noise level is low. Noise events exceeding 45dB(A) should therefore be limited if possible. For sensitive people an even lower limit would be preferred. It should be noted that it should be possible to sleep with a bedroom window slightly open (a reduction of outside to inside of 15dB). To prevent sleep disturbance one should thus consider the equivalent sound pressure level and the number and level of sound events. Mitigation targeted to the first part of the night is believed to be effective for the ability to fall asleep.”

3.3.17 In section 4.3.1, the guidelines are presented in terms of external noise levels incident on buildings:

“At night, sound pressure levels at the outside facades of the living spaces should not exceed 45dB L_{Aeq} and 60dB L_{Amax} , so that people may sleep with windows open.”

4.0 Baseline Noise Monitoring

4.1 Acoustic Character of the Site

4.1.1 The Site is situated within a residential area. The Site was previously a building materials yard. The Site boundary is adjacent to the Greenvale Specialist Care Unit and the nearest residential property on Streatham Common Road South. The existing noise environment at the Site and at the nearest residential receptors is dominated by road traffic noise from Streatham common south road. On the south side of the Site there is a housing complex.

4.2 Baseline Noise Monitoring Methodology

4.2.1 An unattended baseline measurement was undertaken over a 5-day period from 12:15 hrs on 5th October to 11:15 on 10th October 2023. **Figure 4.1** below shows the baseline noise monitoring locations.

4.2.2 The unattended sound level meter was fixed to a fence approximately 2m above ground level at the location 'U1' shown in Figure 3.1. This monitoring location is considered to be representative of noise levels at the nearest residential building on Lower Road. The attended sound level meter was fixed on a tripod 1.5m above ground level at the location 'A1' shown in Figure 3.1. Both measurement positions were considered to be free-field.

Figure 4.1: Noise Monitoring Location



4.2.3 Noise measurement equipment details are shown in **Table 4.2**. The calibration of the above sound level meter complies with IEC 61672-1:2002 class 1; IEC 60651 type 1; IEC 60804 type 1 and IEC 61260 class 1.

Table 4.2: Noise Monitoring Equipment

Equipment ID	Equipment Type	Serial No.	Latest Laboratory Calibration
U1	Rion NL-52	00610175	31/10/2023
A1	Svantek SVAN-977	34170	01/08/2023

4.2.4 The entire signal path was checked for calibration at the beginning and end of the survey. The calibration reference level used was 94dB. The calibration check before and after the survey was within 0.1 dB of 94dB.

4.2.5 **Table 4.3** details the weather conditions for the survey period.

Table 4.3: Weather Conditions

Condition	Start	During (typical, from locally recorded data)	End
Wind Speed (ms ⁻¹)	2	0 – 4	2
Precipitation	None	None	None

4.3 Baseline Monitoring Results

4.3.1 A statistical analysis has been undertaken on the measured raw unattended baseline data. A summary of the measured baseline noise levels is presented below in **Table 4.3**. The time history graphs showing the measured baseline noise levels can be found in Annex B.

Table 4.3: Unattended Noise Monitoring Results – Location U1

Measurement Parameter	Free field sound levels ref 2×10^{-5} Pa
L _{Aeq,16hr} Day	48 dB
L _{Aeq,8hr} Night	42 dB
L _{AFmax} Day	73 dB
L _{AFmax} Night	63 dB

Measurement Parameter	Free field sound levels ref 2 x 10 ⁻⁵ Pa
Typical* L _{AF90,1h} Day	41 dB
Typical* L _{AF90,15min} Night	35 dB
Apparent Dominant Noise Sources	Road traffic noise
* Typical L _{A90} values have been derived by reviewing the time history as well as range, mean, mode of L _{A90,15min} values in each period and selecting a representative value.	

4.3.2 Table 4.4 below summarises the results of the attended noise measurements.

Table 4.4: Attended Noise Monitoring Results – Location A1

Measurement Parameter	Free field sound levels ref 2 x 10 ⁻⁵ Pa
L _{Aeq,1hr}	54 dB
L _{AFmax}	78 dB
L _{AF90,1h}	50 dB
Main noise sources	Road traffic noise

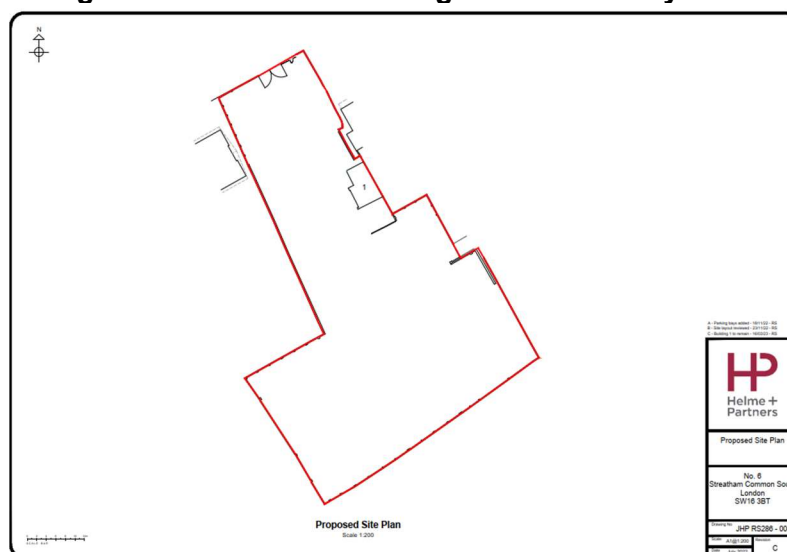
4.3.3 Attended location A1 was in closer proximity to the road traffic noise sources including Streatham Common South and A23 compared to U1, and with fewer noise-screening obstacles between road traffic noise sources and the measurement location. To obtain a representative night-time background noise level for receptors on Streatham Common South, the difference between the background noise level results for A1 and U1 (50 dB and 41 dB respectively) has been used. Therefore, by applying a +9 dB correction to U1 night-time background noise level results, the typical night-time background noise level used for the assessment for receptors on Streatham Common South is 44 dB L_{A90,15min}.

5.0 Construction Noise Assessment

5.1 Demolition Noise Assessment

- 5.1.1 The potential noise impacts associated with the demolition/construction phase of the proposed development have been assessed in a separate *'Demolition Noise Assessment'*, previously submitted to LBL. This considered the proposed demolition of 4no. existing buildings at the site. The programme dates presented within this document may be subject to change, however all other assumptions remain unchanged and the conclusions are summarised below.
- 5.1.2 The demolition noise was assessed through noise modelling, including impacts upon existing receptors.
- 5.1.3 With suitable mitigation measures in place (as detailed in this report), no significant noise effects are predicted as a result of the demolition. The proposed works are therefore compliant with both national and local noise policy.
- 5.1.4 It is noted that during demolition works, all walls and fences on the boundary of the site will be retained at the same height as present. As shown on the Figure 4.1, building 1 will be retained. As such, the noise shielding effect provided by the boundary walls will remain the same.
- 5.1.5 A site-specific Construction Environmental Management Plan (CEMP) will be prepared and implemented to assist in reducing potential noise impacts. The residual demolition noise impacts are expected to be local and temporary in nature.

Figure 5.1: Retained building 1 and boundary walls



6.0 Operational Noise

6.1 Operational Noise Assessment Methodology

6.1.1 The operational noise assessment considers:

- Operational site noise – i.e. vehicle movements and unloading. Operational site noise – i.e., vehicle movements and unloading; and
- Fixed plant noise – i.e., noise from any fixed mechanical or industrial plant on site.

6.1.2 In order to aid the assessment of operational noise, a 3-D noise model has been developed for the site. Two modelling scenarios have been developed:

1. The previous builders yard operations. Activities on site were based on a video of the operation of the builders yard that had been provided to SVA.
2. The proposed use. Activities for the proposed use have been assumed to be similar to those of the previous / currently permitted builders yard use but modified based on information provided by the client for the proposed development (i.e. the use of electric rather than diesel forklifts, and broadband rather than tonal reversing alarms etc.).

6.1.3 Noise source data for the model was taken from measured data of similar activities, relevant British Standards and from manufacturer's data sheets.

6.1.4 The general horizontal plan information of the area surrounding and including the proposed development site was imported from Open Street Map, Defra LIDAR Data and Google Earth. Building height information was based open-source building height data¹, observations from site and from Google Street View.

6.1.5 The following assumptions were used for the model and noise assessment:

- Plant / activity noise assumptions (including 'on-time corrections based on BS 4142 1-hour daytime and 15 minute night-time periods) are detailed in **Table 6.1**
- All walls and fences on the boundary of the site have been included as reflective barriers, for both proposed development and previous use models.
- Ground assumed to be hard, with a ground absorption coefficient of $G=0$;
- Two orders of reflection;

¹ Emu Analytics "London Buildings Heights" Data – data certificate: <https://certificates.theodi.org/en/datasets/213432/certificate>

- Buildings and walls/fences/barriers are modelled as reflecting (smooth, non-structured façade);
- Noise levels calculated at worst affected floor window level.

6.1.6 Noise models have been created for typical daytime use and limited night-time use scenarios.

Table 6.1: Noise Model Input Data - Daytime

Plant type	SWL (dB)	Quantity	%On-time	%On-time Correction	Resultant SWL
		Worst daytime hour	Worst daytime hour	Daytime (dB)	Daytime (dB)
'Previous Use' Scenario - Builders Yard					
HGV approaching	98	1	2	-18	80
Tonal reversing alarm	105	1	1	-21	84
Van movements (manoeuvring and idling)	89	11	9	-10	79
Diesel forklift	105	4	50	-3	102
Forklift tonal reversing alarm	98		25	-6	92
'Proposed Development' Scenario – Open Storage					
Van movements (manoeuvring and idling)	89	13	11	-10	79
Electric forklift	84	4	50	-3	81
Forklift broadband reversing alarm	85		25	-6	79

Table 6.2: Noise Model Input Data – Night-time

Plant type	SWL (dB)	Quantity	%On-time	%On-time Correction	Resultant SWL
		Worst night-time 15 minutes	Worst night-time 15 minutes	Night-time (dB)	Night-time (dB)
‘Proposed Development’ Scenario – Open Storage, Limited Night-time Operations					
Van movements (manoeuvring and idling)	89	2	7	-12	77

6.2 Operational Site Noise Assessment - Daytime

6.2.1 Based on the assumptions detailed in the previous section, daytime specific sound levels for both the previous and proposed uses have been calculated at the nearest noise sensitive receptors (NSRs).

6.2.2 These specific sound levels have then been used to identify BS 4142 rating levels for both the previous and proposed operations. The following character corrections have been applied to the predicted specific noise levels:

Table 6.3: Character Corrections

Scenario	Total Character Correction	Description	Comments
Existing	+ 7 dB	+ 4 dB for clearly perceptible tonality + 3 dB for intermittency	Tonal reversing alarms and stop / start activity.
Proposed	+ 3 dB	+ 3 dB for intermittency	Broadband reversing alarms so no tonality correction. Intermittency correction is still applied.

6.2.3 **Tables 6.4** presents the predicted rating levels and identifies the difference between the daytime operational industrial activities of the previous use (builders' materials yard) and the operational industrial activities of the proposed development (open storage) at the nearest residential receptors. Noise model screenshots showing noise predicted at the worst-affected receptors are presented below in **Figure 6.1** for the recent operations, and in **Figure 6.2** for night-time operations.

Table 6.4: Worst-case operational Site Noise Predictions - Daytime

NSR	Predicted Worst Case Rating Level, dB L _{Ar,1h} [A]*	Predicted Worst Case Rating Level, dB L _{Ar,1h} [B]^	Difference in Rating Level, dB [B-A]
	Previous Use	Proposed Development	
R1 – 7 Streatham Commons South	80	58	-22
R2 – 6A Baldry Gardens	71	47	-24
R3 - Charles Mills Court Estate	71	47	-24
R4 – Voss Court	66	47	-19
R5 - Greenvale Specialist Care Unit	67	51	-16
* 7 dB BS4142 penalty applied (4 dB tonality, 3 dB intermittency) to predicted free-field noise levels at all NSRs			
^3 dB BS4142 penalty applied (3 dB intermittency) to predicted free-field noise levels at all NSRs			

Figure 6.1: Modelled Operational Site Noise – Previous Use

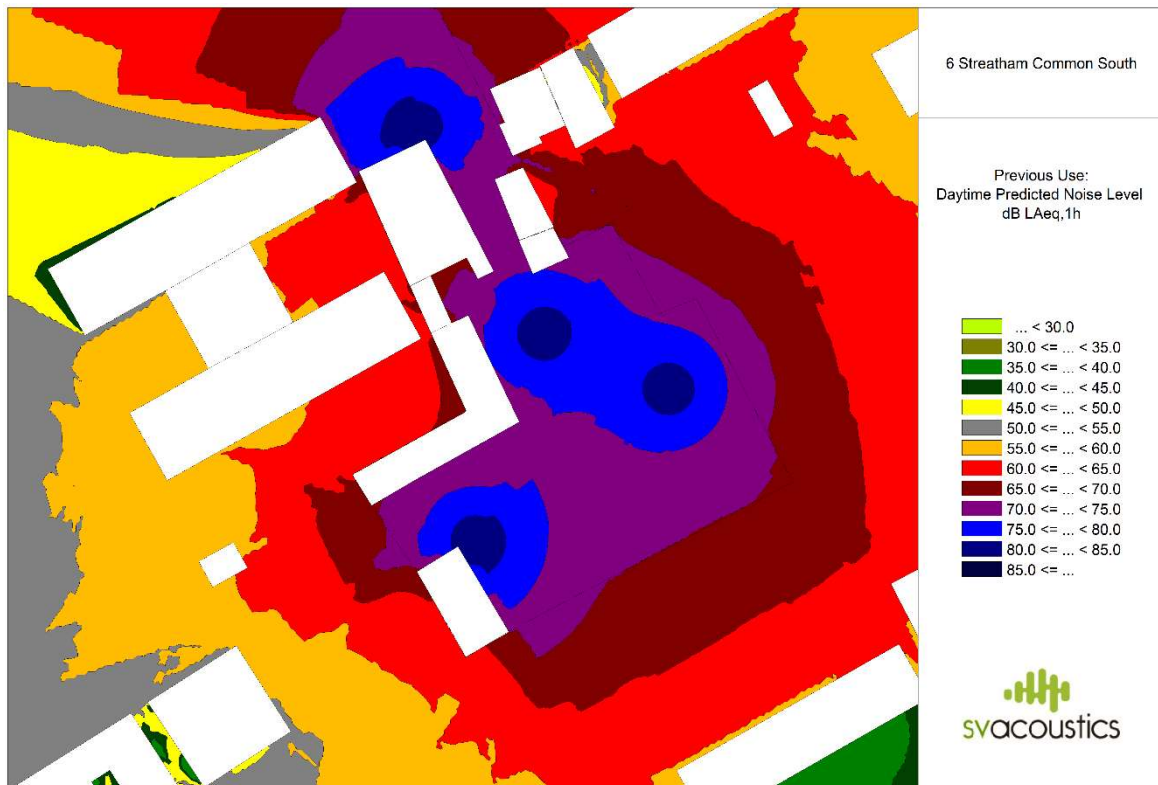


Figure 6.2: Modelled Operational Site Noise – Proposed Development



- 6.2.4 Predicted rating levels generated by proposed development, when compared to the previous use, show a large reduction of noise, by up to 24 dB at the nearest NSRs. The main reasons for this are the use of gas / electric forklifts for unloading and broadband rather than tonal reversing alarms.
- 6.2.5 It is also important to note that the proposed development will implement a noise management plan to cover all operations. This is likely to result in a greater reduction in noise compared to the previous site whose activities (based on the video provided to SVA) appeared not to consider noise impacts.
- 6.2.6 The recent use of the Site was industrial in nature with constant use during the day. The proposed development is likely to include less activity during a typical day and therefore the worst-case proposed development scenario (i.e. the noisiest hour) is likely to occur less frequently than it would have done with the previous use.
- 6.2.7 When assessed in full accordance with BS 4142, it is likely that the proposed new development may still result in adverse impacts at nearest noise sensitive receptors. However, these impacts will be significantly reduced than those generated by the previous use of the site.
- 6.2.8 It is understood that the current use of the site is unrestricted, and therefore activities similar to those that were previously undertaken at the builders yard could still be carried out on the site. Therefore, the proposed development is likely to provide a significant reduction in adverse noise impact compared to the currently permitted use of the site.
- 6.2.9 Given the large decrease in noise levels and frequency of worst-case activities compared to the previous use, it is predicted that the proposed site will lead to **significant positive impact** in terms of noise.
- 6.2.10 As discussed above, Absolute levels of noise can be further reduced through good management practices and these are presented within the Site '*Noise Management Plan*' (221-SVA-REP-03-01).

6.3 Operational Site Noise Assessment – Night-time

- 6.3.1 It is understood that the previous operation of the site was unrestricted and could occur at any time, including during the night-time.
- 6.3.2 Therefore, similarly to the daytime scenario, any noise generated by the proposed development at night is likely to be significantly quieter than what could have previously occurred, due to the use of quieter equipment and working practices.

6.3.3 Notwithstanding the above, the applicant is aware that Lambeth Council would like to limit operational hours on the site. It is therefore proposed that normal operations will only take place during the following hours:

- 07:00 to 19:00 hours Monday to Saturday
- 09:00 to 18:00 hours Sundays and Bank Holidays

6.3.4 However, outside of these hours, it is proposed that reduced working to include limited deliveries, loading and unloading to the rear of the site, away from the nearest residential receptors could occur.

6.3.5 As described in the previous section, a night-time noise modelling scenario has been created to assess the impact of these reduced / limited out of hours activities during the most sensitive night-time periods.

6.3.6 An assessment of the impact of the reduced out of hours working during the night-time presented below in **Table 6.4**. This is based on a single van arriving and leaving site, loading or unloading (using forklifts) over a 15-minute period at the rear of the site, away from the noise sensitive receptors. It is understood that the previous tenants of the Site were able to work under unrestricted hours and therefore these limited operations represent a significant improvement in terms of the potential noise levels that could be experienced by the nearest NSRs during the previous site operation.

Table 6.5: Operational Site Noise Predictions – Night-time limited operations

NSR	Predicted Rating Level (Proposed Use) dB $L_{Ar,15min}^*$ [A]	Background Noise Level, dB $L_{A90,15min}$ [B]	Noise level difference [A-B]	BS4142 Assessment
R1 – Streatham Commons South	49	44	+5	Adverse impact (not significant)
R2 – Baldry Gardens	44	35	+9	
R3 – Charles Mills Court Estate	44	35	+9	
R4 – Voss Court	44	35	+9	
R5 – Greenvale Specialist Care	41	44	-3	Low impact

*3 dB BS4142 penalty applied (3 dB intermittency) to predicted free-field noise levels at all NSRs

- 6.3.7 When assessed in accordance with BS 4142, it can be seen that the proposed limited night-time operations may result in adverse impacts but do not result in significant adverse impacts.
- 6.3.8 BS 4142 also requires an assessment of context. Therefore, as previously mentioned, it is important to note that the site was previously able to operate on an unrestricted basis and this would have resulted in a significantly higher noise impact when compared to the limited out of hours work proposed.
- 6.3.9 In addition, any out of hours work will be subject to the noise management plan that will help to further reduce noise emissions above (i.e., minimising vehicle movements and the use alarms).

6.4 Fixed Plant Noise

- 6.4.1 At this stage it is not anticipated that there will be any significant fixed plant at the Site, however this assessment is provided should fixed plant be required. On-site fixed plant emissions have not been quantitatively assessed because this will depend on the nature of operation and the end users of the Site. This information is currently unavailable.
- 6.4.2 It is recommended that any fixed plant be situated away from the residential properties, if practicable.
- 6.4.3 To avoid adverse noise impacts from fixed plant, it is proposed that new fixed plant items should be selected and/or attenuated such that they meet the plant noise emission requirements of BS4142.
- 6.4.4 It is suggested that the plant be selected in accordance with BS4142 and with the design criteria that Rating Level associated with the operational noise from the fixed plant should not exceed the measured typical background sound levels.

7.0 Conclusions and Recommendations

- 7.1.1 A noise survey and impact assessment has been undertaken for the proposed open storage site at 6 Streatham Common South, London SW16 3BT.
- 7.1.2 The proposed site has previously been used as a builders yard and it is understood that the extant planning permission for the site places no restrictions on its use, in terms of either operational hours or noise emissions.
- 7.1.3 A noise modelling exercise has been undertaken and noise emissions for the previous use of the site have been compared to those from the proposed development. It has been found that the proposed development is likely to result in a significant reduction (16 to 24 dB) in noise impacts at nearby receptors. This reduction in noise is mainly due to the use of quieter equipment including electric fork-lift trucks (As opposed to diesel trucks) and broad band reversing alarms (as opposed to tonal alarms).
- 7.1.4 It has therefore been found that the proposed development will represent a significant reduction in noise impact compared to the currently permitted use of the site.
- 7.1.5 Notwithstanding the above, the applicant is aware that Lambeth Council would like to limit operational hours on the site. It is therefore proposed that normal operations will only take place during the following hours:
- 07:00 to 19:00 hours Monday to Saturday
 - 09:00 to 18:00 hours Sundays and Bank Holidays
- 7.1.6 However, outside of these hours, it is proposed that reduced working to include limited deliveries, loading and unloading to the rear of the site, away from the nearest residential receptors could occur. The impact of these activities has been assessed in accordance with BS 4142 and it has been found that significant adverse noise impacts are unlikely to occur. It is also important to note that as the site was previously able to operate on an unrestricted basis, this would have resulted in a significantly higher noise impact when compared to the limited out of hours work proposed.
- 7.1.7 The assessment has been based on the proposed development operating in a similar fashion to the previous use. However, the proposed development will implement a noise management plan (to be agreed with Lambeth Council) and this will help further reduce noise emissions compared to the previous use, that was understood to operate with little or no noise management practices in place.

7.1.8 In summary, it is considered that the proposed development will result in a significant reduction in noise emissions when compared to the previous permitted use of the site. In addition, adverse noise impacts will be minimised through the use of:

- Proposed limitations on hours of normal operations
- Reduced operations outside of these hours; and
- Implementation of a noise management plan (to be agreed with Lambeth Council)

Annex A: Acoustic Terminology

Unit / Tern	Definition
Decibel (dB)	Used as a measurement of sound pressure level. It is the logarithmic ratio of the noise being assessed to a standard reference level.
dB(A)	<p>The human ear is more susceptible to mid-frequency noise than the high and low frequencies. To take account of this when measuring noise the 'A' weighting scale is used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average human. It is also possible to calculate the 'A' weighted noise level by applying certain corrections to an un-weighted spectrum. The measured or calculated 'A' weighted noise level is known as the dB(A) level.</p> <p>Because of being a logarithmic scale noise levels in dB(A) do not have a linear relationship to each other. For similar noises, a change in noise level of 10dB(A) represents a doubling or halving of subjective loudness. A change of 3dB(A) is just perceptible.</p>
L_{90}	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for $n\%$ of the time. L_{90} is the level exceeded for 90% of the time and as such can be regarded as the average minimum level' and is often used to describe the background noise.
L_{eq}	<p>The concept of L_{eq} (equivalent continuous sound level) has up to recently been primarily used in assessing noise in industry but seems now to be finding use in defining many other types of noise, such as aircraft noise, environmental noise and construction noise.</p> <p>L_{eq} is defined as a notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 1 hour).</p>
L_{max}	L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

Annex B: Baseline Noise Monitoring Data

