



**2-6 Camden High Street
London Borough of Camden
NW1 0JH**

51.534887 -0.138446

Noise Assessment

**S19-483/NA
May 2019**

Revision 2

Prepared by :

**Southwest Environmental Limited
80-83 Long Lane
London
EC1A 9ET**

On behalf of :

**Carebrook Limited
157 Camden High Street
London
NW1 7JY**



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APPENDICES

1 **Plans**

1.0 Introduction

Southwest Environmental have been instructed by Carebrook Limited to conduct a Noise Assessment for the proposed development at 2 - 6 Camden High Street. The applicant has been asked to investigate the suitability of the site for residential use.

1.1 Site Address

Address	2-6 Camden High Street London Borough of Camden
Postcode	NW1 0JH
Grid Reference	51.534887 -0.138446

1.2 Site Description

The site is currently as retail and office use.

1.3 Proposed

Erection of rear extension from ground to third floor levels, and erection of roof extension at fourth and fifth floor levels to create 777sqm (Use Class B1) office space. The proposed operational hours are 0700 to 1900 on weekdays.

1.4 Neighbouring Applications

The site has numerous neighbours, who are currently undergoing change / development:

1.4.1 2017/6058/P

KOKO is currently undergoing a refit, and a hotel, pub and private members club is being constructed to the rear of the building. This is a significant noise source and has been considered carefully in this report.

Upon viewing historic events listings it is clear that bands / DJs / performances start at 1900hrs at the earliest, with many starting at 2300hrs.

"Doors 6:30 or 7pm. Headline act usually on at 7.45-8.15pm. Gig ends at 10pm, Antics starts straight afterwards"

1.4.2 2014/6652/P

There is a commercial to residential conversion taking place at 48 - 56 Bayham Place. This appears to have minimal requirements for sound insulation to mitigate noise impacts on its residents, although there are party wall agreements in place to protect neighbours *from* noise from the Bayham Place development.

As this scheme has taken place under permitted development rights there has been no requirement for Noise Assessment.

2.0 Environmental Surveys & Data

Baseline monitoring has been undertaken by ACA Acoustics, in connection with their report concerning noise *from* the proposed development.

"A sound level survey measurement position was selected to the flat roof, overlooking Bayham Place, equivalent to the position of the nearest residential windows. The unattended survey was carried out over a nominally 24-hour period between 25th – 26 April 2018. During the survey the weather remained dry and calm."

The LA90 15min sound level on Bayham Place was calculated at 54dBA. Which is noted being representative of "night time back ground sound level".

3.0 Results

3.1 Environmental Noise Survey

The LA90 15min sound level on Bayham Place was calculated at 54dBA.

3.2 Adopted Noise Levels

The adopted background noise levels for this assessment are 54dBA LA90 15minutes. Perhaps the worst effects from noise are sleep disturbance, as this has been shown to create negative cardio vascular health effects.

An assessment of noise impacts *from* the proposed development in accordance with BS4142 have been presented in ACA Acoustics Report 180417-R001.

4.0 Noise & Vibration Sources

4.1 Noise from KOKO

The nightclub and concert venue (in its current form) is considered as noise source. Uncertainty of new noise environment post alterations are discussed in section 4.3.

It can be seen from legacy listings displayed on KOKO's website that the venue regularly hosts rock concerts and other live music events. Numerous customer reviews report hearing loss upon leaving the venue, this is indicative of a sound level minimum of 85dB, the broad consensus for sound levels at Rock Concerts is approximately 110dB. We have adopted this later value as a worst case value.

4.2 Vibration from KOKO

Vibration is also to be considered. Lower frequencies of amplified music can create vibrations which can be transmitted though building structures. This is particularly pertinent as 2 - 6 Camden High Street abuts KOKO directly. Preliminary surveys have indicated that the buildings are structurally linked which maximises potential for transmission of vibration.

Subjected to the sound pressure, walls may vibrate at low frequencies which may be excited by continuous musical performance. Glass windows may also vibrate, at higher frequencies. As a estimate it is expected that the building as a whole and the walls will have their lower

natural frequencies less than 20 Hz. Studies¹ have shown that loud music can create vibration in excess of 1mm/s, when building structures are exposed to sound pressure levels of 105dBA.

4.3 Uncertainty Posed by New Development

Under application 2017/6058/P there are numerous changes underway at KOKO which will give rise to unknown noise impacts. The alterations see the addition of a Public House (a significant noise source in its own right), a private members club and several outdoor terraces.

The combined changes give rise to a potential future noise environment which will be very unlikely to be conducive to sleeping quarters being placed immediate adjacent.

There is also the possibility of multiple noise & vibration sources to consider, several venues coming to produce several sources of noise in the form of amplified music could give rise to a very unpleasant noise & vibration scenario post development. For example two noise sources of 100dB occurring simultaneously would result in a sound power of 103dB.

We note that noise assessments have been undertaken and mitigative measures are a condition of planning. But it is hard to envisage a situation where by a future resident will not be disturbed living in close proximity to this powerful, and at present unquantified noise source.

The outside terraces proposed for "eating and drinking" are likely to produce noise at night of a type that is particularly disturbing, laughter can be as loud as 85dB, and this against a background level of 54dbA would be particularly disturbing.

5.0 BS 8233

BS 8233 suggests that a good indoor ambient noise level within bedrooms should be 35 LAeqT.

Considering a source of 110dBA, and zero attenuation of distance, it will be required to provide 75dB of attenuation in the building envelope.

A typical attenuation system (RockWool Flexi) at 70mm thickness will provide 57 dB of attenuation, and this based on manufacturers quoted figures, which are likely to be optimistic. Typical attenuation systems also become less effective as the frequency of the sound lowers, with attenuation for low frequency sounds dropping to 49dB.

Application of an internally mounted attenuation system could provide an internal sound level of 53dBA. For low frequency noise as is common in most modern dance music attenuated internal sound level may be as high as 61dB.

6.0 BS 5228

Future residents are likely to be subject to vibration levels over 1mm/s. Vibration becomes perceptible at 0.14mm/s. BS 5228 notes that at 1mm/s:

¹ <http://www.sea-acustica.es/fileadmin/Coimbra08/id161.pdf>

"Vibration of this level in residential environments will cause complaint"

Owing to the requirement for retrofit of damping measures, proving contiguous isolation will be challenging and it very likely that "flanking" of these sub-optimal damping will occur.

7.0 BS4142:2014

BS4142 gives a method for rating sound from industrial and commercial sources affecting people inside or outside dwellings or premises used for residential purposes. An initial estimate of the significance of the sound from the industrial/commercial nature can be assessed by subtracting the measured background noise level from the rating level (this is the specific sound level of the source with any corrections or penalties for distinctive acoustic characteristics). Typically, the greater the difference, the greater the magnitude of the impact.

- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.
- 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 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.

External ambient noise levels are measured as the LA90 15min sound level on Bayham Place was calculated at 54dBA, with internal attenuated noise levels estimated at a worst case of 61dB, this classifies as an "*adverse impact*"

8.0 Conclusions

The below subsection set out why residential accommodation as this location will be unacceptable.

8.1 WHO Guidelines

Noise levels will be in breach of WHO guide values. The World Health Organisation (WHO) has conducted numerous studies with regards the impact of noise on people's health. The findings are that even low levels of noise particularly at night can have significant adverse impacts on health.

"noise threshold(s) for cardiovascular problems is chronic night-time exposure of 50 decibels (dB) or above - the noise of light traffic. For sleep disturbance, the threshold is 42dB, for general annoyance it is 35dB, the sound of a whisper."

8.2 BS 8233

It is highly unlikely that a 35dB bedroom environment required by BS 8233 will be provided.

8.3 BS 5228

There is a high probability that residents would be subject to levels of vibration liable to "cause complaint".

8.4 BS4142:2014

Attenuated noise levels have a high probability of creating "adverse impacts" on potential residents.

9.0 Certification

It should be noted that this assessment is based solely on the plans provided by the client. This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it. This report may suggest an opinion. However, this is for guidance only and no liability can be accepted for its accuracy. The conclusions and recommendations given in this report are based on our understanding of the future plans for the site.

The scope of this Noise Assessment was discussed and agreed with the Client. No responsibility is accepted for conditions not encountered, which are outside of the agreed scope of work. This is a report prepared in support of a planning application. For the avoidance of doubt the consultant states here that the report makes no guarantee against negative noise impacts to or from the proposed development. Recommendations are not exhaustive. It is the client's responsibility to ensure noise mitigation measures are installed.

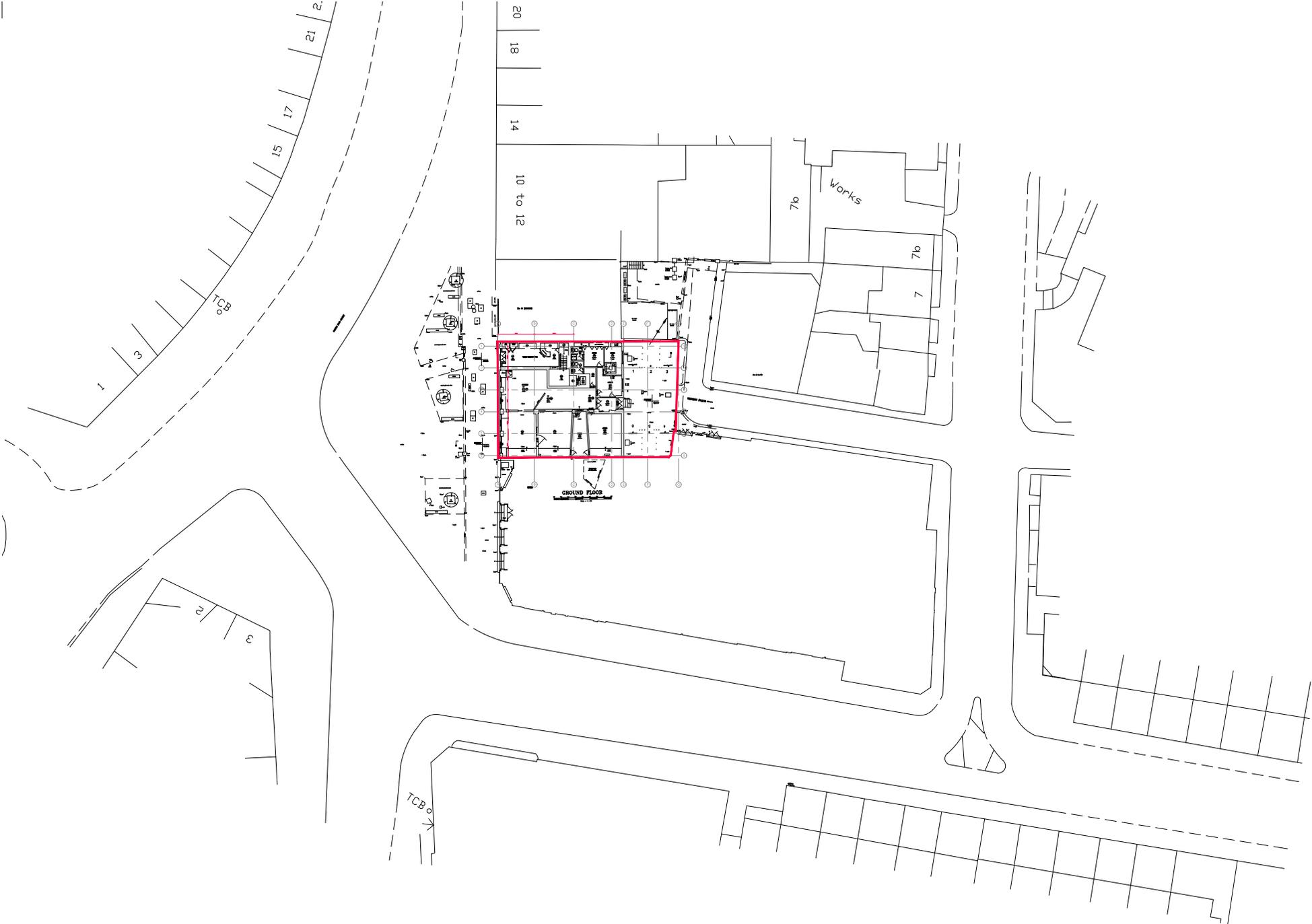


Will Thorpe BSc PGD FGS MIAIA MBIAC
Director



APPENDIX 1

Site Plan



EXISTING

NO	DATE	BY	DESCRIPTION OF AMENDMENTS
1	??/??/??	??	?
2	??/??/??	??	?

		Omnibus, 39-41 North Road, London, N7 9DP Email: info@foundation-architecture.com	
project		2-6 CAMDEN HIGH STREET	
title		SITE PLAN EXISTING	
scale	date	sheet	total
1:250 @ A1	OCT 2017	[] 540	E001

All dimensions to be verified on site.

*Scale is 1:500 at A3