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CRAVEN HOUSE

ENVIRONMENTAL NOISE SURVEY REPORT

DATE OF ISSUE	DETAILS OF CHANGE	AUTHOR	CHECKED
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1.0 INTRODUCTION & SURVEY DETAILS

The development comprises the refurbishment of an existing commercial office building at the site currently known as Craven House, 121 Kingsway London WC2B 6PA.

The site is situated on the west side of Kingsway, close to its junction with High Holborn, and is surrounded by a mix of commercial, retail and residential premises. The nearest residential premises are thought to be apartments/flats located approximately 50 metres to the west of the site in Newton Street.

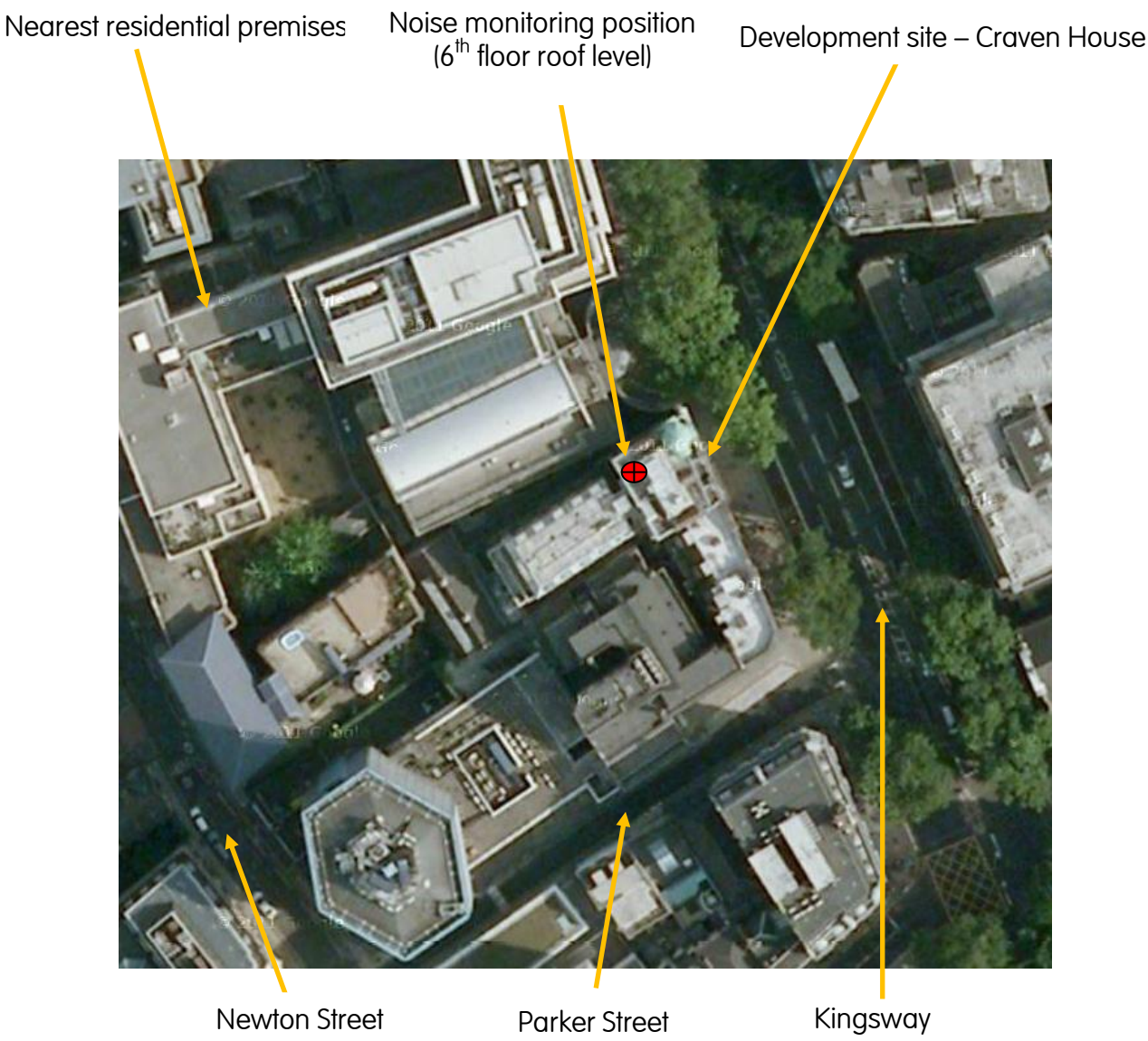
As part of the proposed refurbishment, new items of mechanical services plant are to be installed on the roof. mTT have been commissioned to undertake an environmental noise survey at the site to obtain statistical noise data and to determine the pre-existing background noise levels. Based on the noise survey data, noise criteria are to be established for limiting noise emission from the proposed new plant installations. The noise criteria are to be set in accordance with the requirements of the local planning authority (London Borough of Camden)

OBJECTIVES

To establish, by means of detailed 24 hour fully automated environmental noise monitoring, the existing A-weighted (dBA) $L_{90\ and}$ L_{eq} environmental noise levels at a selected accessible roof level position at the site, thought to be representative of the background noise that exists at the nearest affected properties.

LOCATION

The environmental noise analyser microphone was located externally on the roof, to the rear of the premises, and largely away from existing plant. This position was chosen as it was considered to be representative of the background noise environment which exists at the nearest noise affected properties. Note, from the observations made on site, the nearest noise affected properties are considered



PERIOD

Monitoring was carried out continuously from approximately 12:30 hrs on the 26th September 2011 through to 12:50 hrs on the 27th September 2011. The instrument was set up to monitor noise levels continuously and store data in fifteen minute intervals.

WEATHER

The prevailing weather condition throughout the majority of the survey period was satisfactory for noise monitoring, being dry, mild and with little to moderate breeze. Windspeed, although not recorded, was considered to be less than 5 m/s throughout the survey period.

SITE NOISE CHARACTERISTICS

The ambient noise level was characterised almost entirely by road traffic noise, in particular along Kingsway and High Holborn, and to a lesser extend the surrounding road systems. It is thought that no unusual events occurred during the survey period and the data are considered to be a true representation of ambient noise levels.

2.0 INSTRUMENTATION

A precision grade Norsonic 140 'Type 1' Integrating Sound Level Meter was used for the survey. This was equipped with an environmental microphone and extension cable. The instrument was powered by an external battery and stored in a weatherproof case.

The instrument was calibrated prior and subsequent to use with no calibration drift recorded.

3.0 SURVEY RESULTS

The results of the environmental survey are presented in graphical format in the attached appendices, showing the recorded values of L_{Aeq} and L_{A90}.

See Appendix A for a glossary of terms.

With reference to the measured data, the minimum background noise levels measured during the survey period were as follows:

Daytime (07:00 to 23:00hrs)	- 54.9 L_{A90}
Night time (23:00 to 07:00hrs)	- 52.1 L_{A90}

4.0 ENVIRONMENTAL NOISE LEVEL CRITERIA

Criteria for mechanical services noise emission are normally based upon the prevailing level of background noise in the period of concern and may be set against this to a level as normally defined by the local planning authority.

The London Borough of Camden current noise emission criteria in relation to this site states that;

"Noise levels at a point 1 metre external to sensitive facades shall be at least 5dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment are in operation. Where it is anticipated that any plant/equipment will have noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum), and/or if there are distinct impulses (bangs, clicks, clatters, thumps) special attention should be given to reducing the noise levels from that piece of plant/equipment at any sensitive facade to at least 10dB(A) below the LA90, expressed in dB(A)"

To conform to the above criteria and in accordance with the minimum background noise levels measured during the survey (detailed summarised in 3.0 above); noise from the proposed plant installations should not exceed the following value.

Daytime plant operation (07:00 to 23:00hrs) - 49.9 L_{Aeq}
24hour plant operation - 47.1 L_{Aeq}

The criteria above may be increased by 5dB(A) for emergency plant such as standby generators. If plant contains tonal or impulsive characteristics the external design criteria should be reduced by 5dB(A).

Note: These levels must be achieved cumulatively with all plant operating, and as measured at 1 metre from the window of the nearest affected property.

5.0 CONCLUSION

A background noise level survey has been carried out at Craven House, 121 Kingsway, London WC2, in order to establish the current prevailing environmental noise climate at the site.

Based upon the survey results and discussions with the local planning authority, criteria applicable to noise from the mechanical services plant have been established.

In order to satisfy planning requirements all future mechanical plant items shall be selected to achieve the design noise criteria, and where this is not possible suitable noise control measures will be incorporated.

APPENDIX A - GLOSSARY OF TERMS

Decibel, dB	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. For sound pressure level (Lp) the reference quantity is $2x10^{-5}$ N/m^2. The sound pressure level existing when microphone measured pressure is $2x10^{-5}$ N/m^2 is 0 dB, the threshold of hearing.
L	Instantaneous value of Sound Pressure Level (Lp).
Frequency	Is related to sound pitch; frequency equals the ratio between velocity of sound and wavelength.
A weighting	Arithmetic corrections applied to values of Lp according to frequency. When logarithmically summed for all frequencies, the resulting single "A weighted value" becomes comparable with other such values from which a comparative loudness judgement can be made, then, without knowledge of frequency content of the source.
$L_{eq,T}$	Equivalent continuous level of sound pressure which, if it actually existed for the integration time period T of the measurement, would possess the same energy as the constantly varying values of Lp actually measured.
$L_{Aeq,T}$	Equivalent continuous level of A weighted sound pressure which, if it actually existed for the integration time period, T, of the measurement would possess the same energy as the constantly varying values of Lp actually measured.
$L_{n,T}$	Lp which was exceeded for n% of time, T.
$L_{An,T}$	Level in dBA which was exceeded for n% of time, T.
$L_{max,T}$	The instantaneous maximum sound pressure level which occurred during time, T.
$L_{Amax,T}$	The instantaneous maximum A weighted sound pressure level which occurred during time, T.
Background Noise Level	The value of $L_{A90,T}$, ref. BS4142:1997.
Traffic Noise Level	The value of $L_{A10,T}$.
Specific Noise Level	The value of $L_{Aeq,T}$ at the assessment position produced by the specific noise source, ref. BS4142:1997.
Rating Level	The specific noise level, corrected to account for any characteristic features of the noise, by adding a 5 dBA penalty for any tonal, impulsive or irregular qualities, ref. BS4142:1997.

Specific Noise Source	The noise source under consideration when assessing the likelihood of complaint.
Assessment Position	Unless otherwise noted, is a point at 1 m from the façade of the nearest affected sensitive property.

APPENDIX B - GRAPHICAL REPRESENTATION OF SURVEY RESULTS