

# Riverside House Beresford Street London

## Environmental Noise Survey and Acoustic Design Statement Report

29037/ADS1

21 July 2021

For:  
Marson Property Limited  
22 Braydon Road  
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# Environmental Noise Survey and Acoustic Design Statement Report 29037/ADS1

## Document Control

Rev	Date	Comment	Prepared by	Authorised by
0	21/07/2021	-		
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# **Environmental Noise Survey and Acoustic Design Statement Report 29037/ADS1**

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## **Attachments**

Appendix A – Acoustic Terminology



## 1.0 Introduction

The existing building at Riverside House, Beresford Street, London is proposed to undergo redevelopment under Permitted Development Rights to residential flats.

Permitted development rights allow certain changes to be made to a building without the need to apply for planning permission. As such for this proposal noise from commercial premises needs to be considered, however it is assumed that there is no mandatory requirement to consider noise from other sources.

Hann Tucker Associates have been commissioned to undertake an environmental noise survey and noise impact assessment in order to assess the noise from commercial premises on the occupiers of the proposed development.

There are already residential dwellings adjacent to the site, so therefore the proposal would not alter the existing mix of use classes in the area.

This report presents the methodology and findings of our noise survey and assessment in the context of national planning policies and the policy of the Local Authority.

## 2.0 Objectives

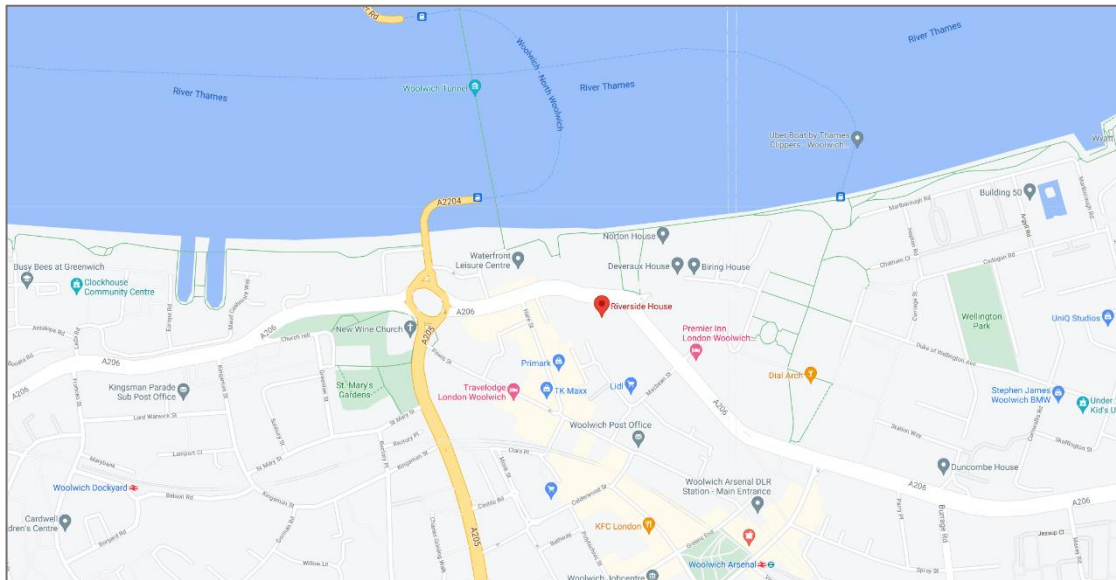
To undertake an environmental noise survey and noise impact assessment in order to assess the noise from commercial premises on the occupiers of the proposed development.

## 3.0 Site Description

### 3.1 Location

The site is located on Beresford Street, London and falls within the jurisdiction of Royal Borough of Greenwich.

The location is shown in the Location Map below.



Location Map (maps.google.co.uk)

### 3.2 Description

Riverside House is made up of a 13-storey building and a 4-storey building connected via a common reception area. The building is located on Beresford Road which is predominantly made up of residential dwellings (including new on-going developments), with some commercial/office buildings.

The site is shown in the Site Plan below.



Site Plan (maps.google.co.uk)



## 4.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

## 5.0 Methodology

The survey was undertaken by G. De Rienzo BSc(Hons) MIOA.

### 5.1 Unmanned Survey

#### 5.1.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 11:00 hours on Tuesday 06 July 2021 to 11:00 hours on Wednesday 07 July 2021.

During the periods we were on site the wind conditions were calm. The sky was generally clear. We understand that generally throughout the survey period the weather conditions were similar to this. These conditions are considered suitable for obtaining representative measurement results.

Measurements were taken continuously of the A-weighted (dBA)  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  sound pressure levels over 15 minute periods.

#### 5.1.2 Measurement Positions

The noise level measurements were undertaken at 2No. positions as described in the table below.

Position No	Description
1	The microphone was located at first floor outside of an existing sash window, overlooking the A206.
2	The microphone was located at first floor outside of an existing sash window, overlooking the rear parking/service area of Riverside House.

The positions are shown on the plan below.





Plan Showing Unmanned Measurement Positions (maps.google.co.uk)

### 5.1.3 Instrumentation

The instrumentation used during the survey is presented in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Position 1 Type 1 ½" Condenser Microphone	PCB	377B02	132146	Calibration on 02/07/2021
Position 1 Preamp	Larson Davis	PRM902	4215	Calibration on 02/07/2021
Position 1 Type 1 Data Logging Sound Level Meter	Larson Davis	824	3838	Calibration on 02/07/2021
Position 2 Type 1 ½" Condenser Microphone	PCB	377B02	106753	Calibration on 13/09/2019
Position 2 Preamp	Larson Davis	PRM902	880	Calibration on 13/09/2019
Position 2 Type 1 Data Logging Sound Level Meter	Larson Davis	824	3839	Calibration on 13/09/2019



Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes were found to have occurred (no more than 0.1 dB).

Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.

## 5.2 Manned Survey

### 5.2.1 Procedure

Fully manned environmental noise monitoring was undertaken from approximately 12:00 hours on 06 July 2021 to 12:30 hours on 07 July 2021.

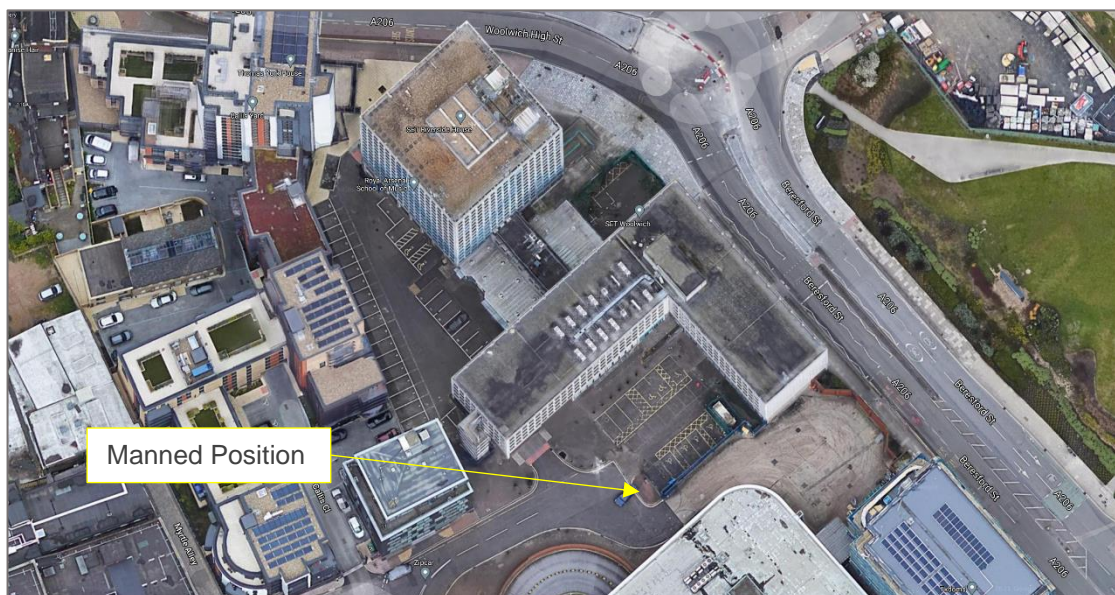
During the survey period the wind conditions were calm. The sky was clear. There was no rain during the survey. Road surfaces were dry throughout the survey period.

Measurements were taken of the A-weighted (dBA)  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  sound pressure levels. Atypical noises were excluded as far as reasonably possible.

### 5.2.2 Measurement Position

The noise level measurements were undertaken to the rear of Riverside House adjacent to the Iceland car park.

The measurements position is shown on the plan below.



Plan Showing Manned Measurement Positions (maps.google.co.uk)





### 5.2.3 Instrumentation

The instrumentation used during the manned survey is presented in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Bruel & Kjaer	2260	2274840	Calibration on 14/08/2019
Type 1 ½" Condenser Microphone	Bruel & Kjaer	4189	2275232	Calibration on 14/08/2019
Preamp	Bruel & Kjaer	ZC002 6	Unknown	Calibration on 14/08/2019

The sound level meter was handheld and was fitted with a microphone windshield.

The sound level meter was calibrated prior to and on completion of the survey. No significant change was found to have occurred (no more than 0.1 dB).

## 6.0 Results

### 6.1 Results of Unmanned Survey

The results have been plotted on Time History Graphs 29037/TH1.1 to 29037/TH1.2 enclosed presenting the 15 minute A-weighted (dBA)  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  levels at each measurement position throughout the duration of the survey.

The daytime  $L_{Aeq(16-hour)}$ , night-time  $L_{Aeq(8-hour)}$ , and Lowest  $L_{90}$  noise levels for each position are presented in the tables below.

Position	Daytime $L_{Aeq(16-hour)}$	Night-Time $L_{Aeq(8-hour)}$	Typical Daytime $L_{90(15min)}$	Typical Night-Time $L_{90(15min)}$
1	71 dB	68 dB	66 dB	51 dB
2	64 dB	57 dB	56 dB	48 dB

The above levels are as measured at the measurement positions and include local reflections.



## 6.2 Results of Manned Survey

The measured  $L_{Aeq(30\text{-minute})}$  noise level recorded was 53dBA.

## 7.0 Discussion of Noise Climate

During the periods we were on site the dominant noise source was noted to be road traffic from the A206.

During our investigation of commercial noise sources, it was found that no neighbouring plant was visible from either roof of Riverside House, and ground level plant was limited to the Iceland car park roof plant. This was measured in our manned noise assessment.

## 8.0 Acoustic Requirements

### 8.1 BS 4142:2014

When setting plant noise emission criteria reference is commonly made to BS 4142: 2014 “*Methods for rating and assessing industrial and commercial sound*”.

The procedure contained in BS 4142:2014 provides an assessment of the likely effects of sound on people when comparing the specific noise levels from the source with representative background noise levels. Where the noise contains “a tone, impulse or other characteristic” then various corrections can be added to the specific (source) noise level to obtain the “rating level”.

BS 4142 states that: “*The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs*”. An estimation of the impact of the specific noise can be obtained by the difference of the rating noise level and the background noise level and considering the following:

- “*Typically, the greater this 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 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.”*

The determination of the “rating level” and the “background level” are both open to interpretation, depending on the context.

In summary it is not possible to set plant noise emission criteria purely on the basis of BS 4142:2014. It is reasonable to infer from the above, however, that a difference of around -5dB corresponds to “No Observed Effect Level” as defined in the Noise Policy Statement for England. It is also reasonable to infer from the above that if the plant noise rating level does not exceed the existing background noise level outside any noise sensitive residential window then the plant noise is of “low impact”.

## 8.2 Permitted Development Rights

Permitted development rights allow certain changes to be made to a building without the need to apply for planning permission. These derive from a general planning permission granted by Parliament, rather than by the local planning authority. The updated Town and Country Planning General Permitted Development (England) (Amendment) Order 2016 (GPDO) came into force on 6 April 2016.

In relation to the change of use from offices to dwellings/houses, the GPDO now states that:

“development under Class O is permitted subject to the condition that before beginning the development the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to .... impacts of noise from commercial premises on the intended occupiers of the development”.

As such for this proposal noise from commercial premises needs to be considered, however it is assumed that there is no mandatory requirement to consider noise from other sources.

## 9.0 Noise from Commercial Activities

As discussed in Section 7.0, the noise climate is dominated by road traffic noise and no neighbouring rooftop plant was visible or audible during our inspections, however some plant to the rear was visible above the Iceland car park. Images from the roof of Riverside House, and of the Iceland car park plant are shown below.



Images from the 13<sup>th</sup> floor roof of Riverside House. Neighbouring buildings visible but no direct view of any rooftop plant or any audible plant.



Images from the 4<sup>th</sup> floor roof of Riverside House. Neighbouring buildings visible but no direct view of any rooftop plant or any audible plant.

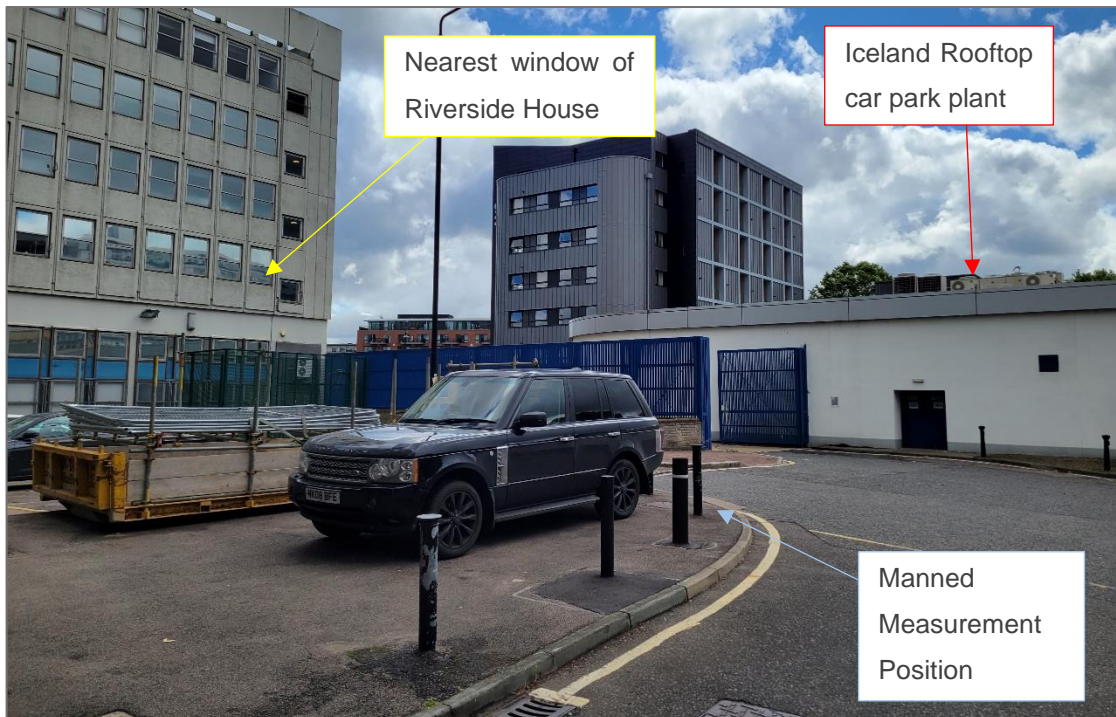


Image showing Iceland rooftop plant and riverside house



A manned measurement was undertaken at ground floor level. During this survey, the measured  $L_{Aeq(30\text{-minute})}$  noise level recorded was 53dBA, and the noise climate consisted mostly of road traffic and construction works from adjacent buildings, however some faint plant noise was audible from the measurement position. With consideration to undertaking a robust assessment however, the measured noise level will be considered plant noise only.

The manned position had direct line of sight to the plant and was located 15 metres from the plant location.

The nearest window of Riverside House shown in the image above is located approximately 28 metres from the plant location.

Therefore, including a distance loss correction the noise level predicted at worst-case windows of Riverside House is approximately 48dBA.

The plant noise is therefore predicted to be approximately 8dBA below the daytime typical background noise level to the rear of Riverside House, and equal to the night-time typical background noise level.

Plant noise from the Iceland rooftop car park plant is therefore considered to be low impact in line with BS4142:2014.

Regarding our unmanned noise survey, it was found that commercial noise sources were not influencing the results above road traffic noise, indicating that the impact of noise from commercial premises is low.

Furthermore, the adjacent properties on Beresford Street (as well as other nearby properties and new developments) are already residential. Therefore, the inclusion of use Class C3 at Riverside House would not alter the existing mix of uses in the area.

On the basis of the above it is considered that the conversion of Riverside House should not fetter the operation of the existing nearby commercial activities.

## 10.0 Conclusions

The environmental noise impact upon the proposed dwellings has been assessed in the context of national and local planning policies.





For this proposal noise from commercial premises needs to be considered, however it is assumed that there is no mandatory requirement to consider noise from other sources.

A detailed environmental noise survey has been undertaken in order to establish the currently prevailing environmental noise climate around the site. It was found that commercial noise sources were not influencing the results above road traffic noise, indicating that the impact of noise from commercial premises is low.

Furthermore, the adjacent properties on Beresford Street (as well as other nearby properties and new developments) are already residential. Therefore the inclusion of use Class C3 at Riverside House would not alter the existing mix of uses in the area.

## Appendix A

The acoustic terms used in this report are defined as follows:

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. $30\text{dB} + 30\text{dB} = 33\text{dB}$ , not $60\text{dB}$ ).
dBA	<p>The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The <sub>A</sub> subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted</p> <p>It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.</p>
$L_{90,T}$	$L_{90}$ is the noise level exceeded for 90% of the period $T$ (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.
$L_{eq,T}$	$L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, $T$ .
$L_{max}$	$L_{max}$ 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.
$L_p$	Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of $2 \times 10^{-5}$ Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).
$L_w$	Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually $10^{-12}$ W).

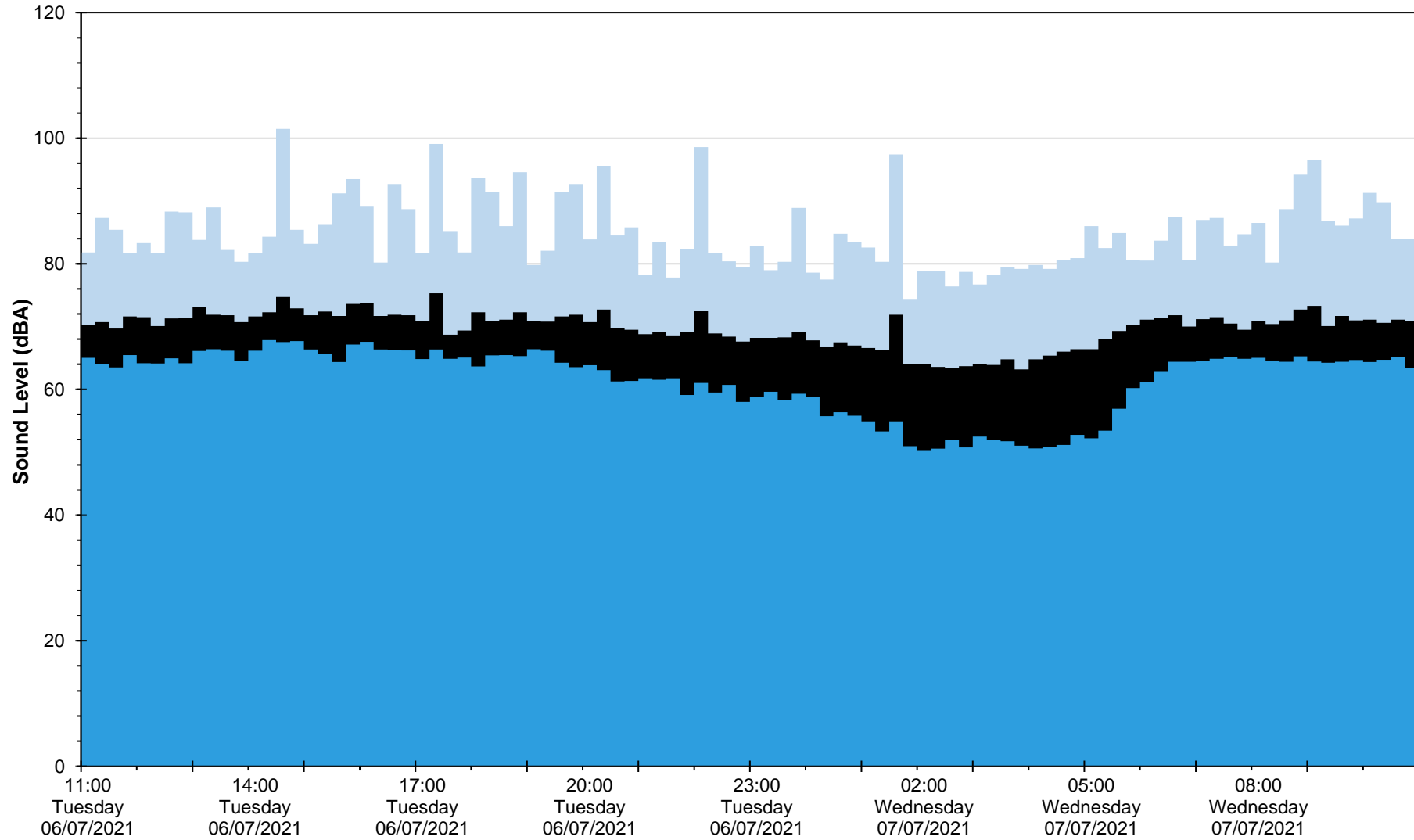
# Riverside House

## Position 1

$L_{eq}$ ,  $L_{max}$  and  $L_{90}$  Noise Levels  
Tuesday 6 July 2021 to Wednesday 7 July 2021

■  $L_{max}$  ■  $L_{eq}$

■  $L_{90}$



Date and Time

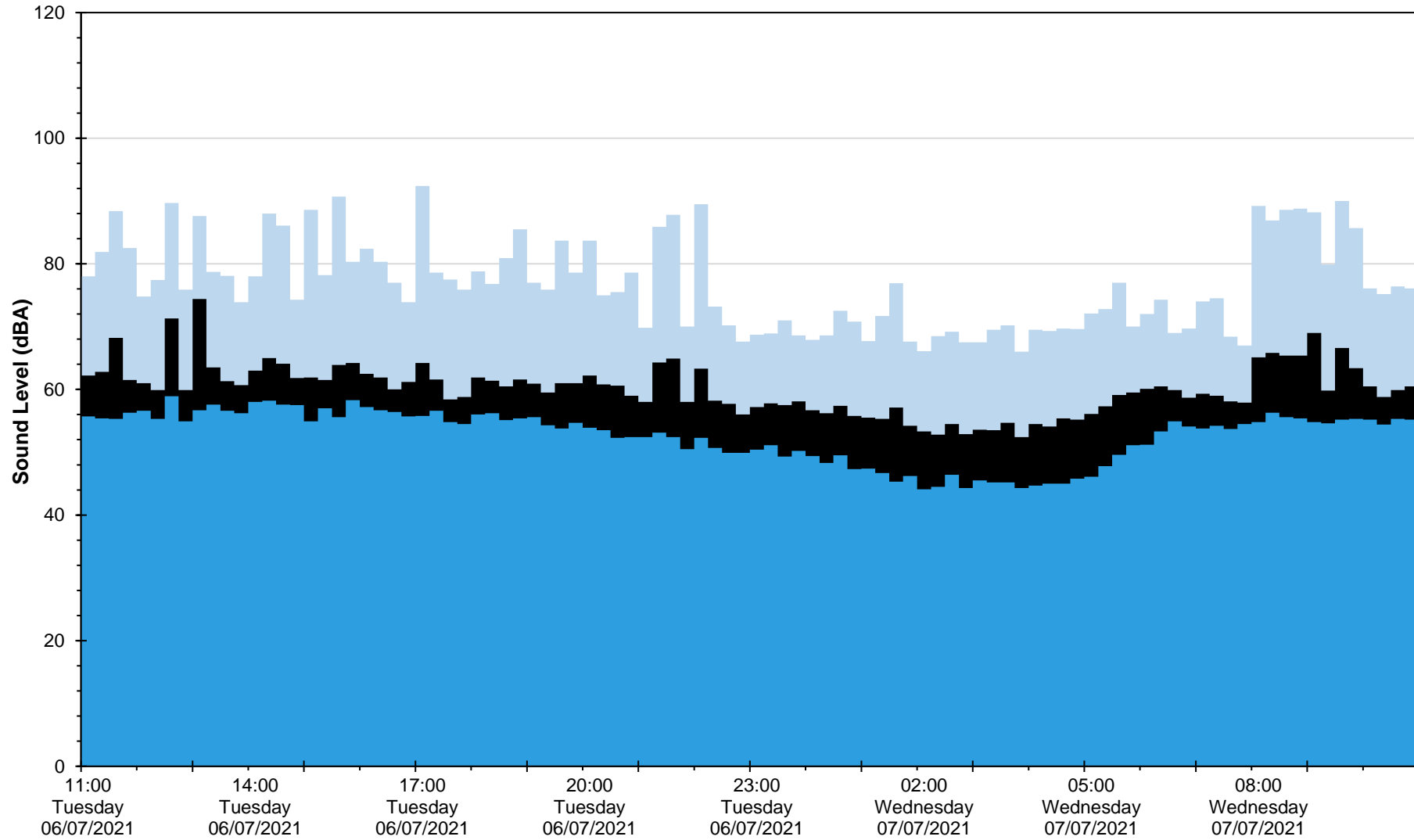
29037/TH1.1

# Riverside House

## Position 2

$L_{eq}$ ,  $L_{max}$  and  $L_{90}$  Noise Levels  
Tuesday 6 July 2021 to Wednesday 7 July 2021

■  $L_{max}$  ■  $L_{eq}$   
■  $L_{90}$



Date and Time

29037/TH1.2