Description	Noise assessment for a proposed residential development at Kingsley Farm, Harrogate
Date	4 February 2015
Issued by	Alex Priestley
Issued to	Sarah Worthington
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1. INTRODUCTION

Peacock and Smith are involved in a project to develop land at Kingsley Farm, Harrogate, into a residential development. An outline application for the proposed development has already been submitted to Harrogate Borough Council. The LPA has requested a noise assessment, taking account of the railway line (located approximately 150 m to the north and east of the site).

Spectrum Acoustic Consultants has been instructed to carry out a basic assessment of noise from the railway.

2. SITE DESCRIPTION

The site for the proposed residential development is located on Kingsley Farm, Harrogate. To the north of the site is a railway with open space beyond. To the east and south are residential areas. To the west of the site there is open space with Harrogate High School and further residential areas beyond.

3. NOISE MEASUREMENT SURVEY

3.1 Methodology

The ambient noise survey consists of measuring noise levels at locations representative of the external facades of the closest dwelling to the railway line. Measurements were carried out from 19 to 20 January 2015 over a 24 hour period.

Noise measurement parameters consisted of equivalent continuous (L_{Aeq}) noise levels and maximum (L_{AFmax}) noise levels as well as statistical noise levels (termed Ln, where n is the percentage of time the level is exceeded during the measurement period). Both overall and 1/1 octave band measurements were stored for later analysis.

The following equipment was used:

- Bruel & Kjaer Type 2250 Sound Level Meter s/n 2726905
- Bruel & Kjaer Type 4189 Microphone s/n 2710995
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 2730220

Before and after the survey, the sound level meter was field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The meter, microphone and field calibrator are laboratory calibrated biennially in accordance with UKAS procedures or to traceable National Standards.

3.2 Results

The results of the measurement survey are shown in Table 1.

Measurement position	Day $L_{Aeq,16hr}$ (dB)	Night $L_{Aeq,8hr}$ (dB)	Night typical L_{AFmax} (dB)
Position 1 Dwelling closest to railway line	45	30	See below

Table 1: Summary of results of ambient noise survey – 19 to 20 January 2015

Noise measurements were recorded in contiguous 5 minute samples. During the night, L_{AFmax} 45 dB was exceeded 12 times, 4 of which also exceeded L_{AFmax} 50 dB. The highest night time L_{AFmax} was 57 dB.

4. ASSESSMENT

The noise level measured represents the noise level outside the nearest proposed dwelling to the railway.

BS8233:2014 sets out suitable internal noise levels for dwellings, for resting and sleeping conditions:

- During the daytime period, guideline noise levels are $L_{Aeq,16hr}$ 35 dB in living rooms and bedrooms, and $L_{Aeq,16hr}$ 40 dB in dining rooms.
- During the night time period, the guideline noise level for bedrooms is $L_{Aeq,8hr}$ 30 dB.
- World Health Organisation guidelines advise that during the night time period single sound events should not regularly exceed L_{AFmax} 45 dB (measured inside bedrooms). WHO defines 'regular' as not more than 10-15 events per night.

BS8233:1999 sets out that the reduction of noise through a partially open window is expected to be 10-15 dB. This means that internal noise levels inside properties on this site, with open windows, would be L_{Aeq} 30-35 dB during the day, and L_{Aeq} 15-20 dB during the night. This complies with BS8233:2014 Guidelines.

Similarly, noise levels from individual events in terms of L_{AFmax} would not be expected to regularly exceed 45 dB.

Therefore, no noise mitigation measures are required.

BS8233 also suggests guidelines for noise levels in external areas that are used for amenity space, such as gardens and patios. *"It is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline of 55 dB $L_{Aeq,T}$, which would be acceptable in noisier environments".* The site meets the more stringent of these guidelines and so again, no noise mitigation measures are required.

5. CONCLUSIONS

This report describes the level of noise from the railway which affects land proposed for residential use at Kingsley Farm, Harrogate. It demonstrates that no acoustic mitigation is required to protect future residents from this noise source.

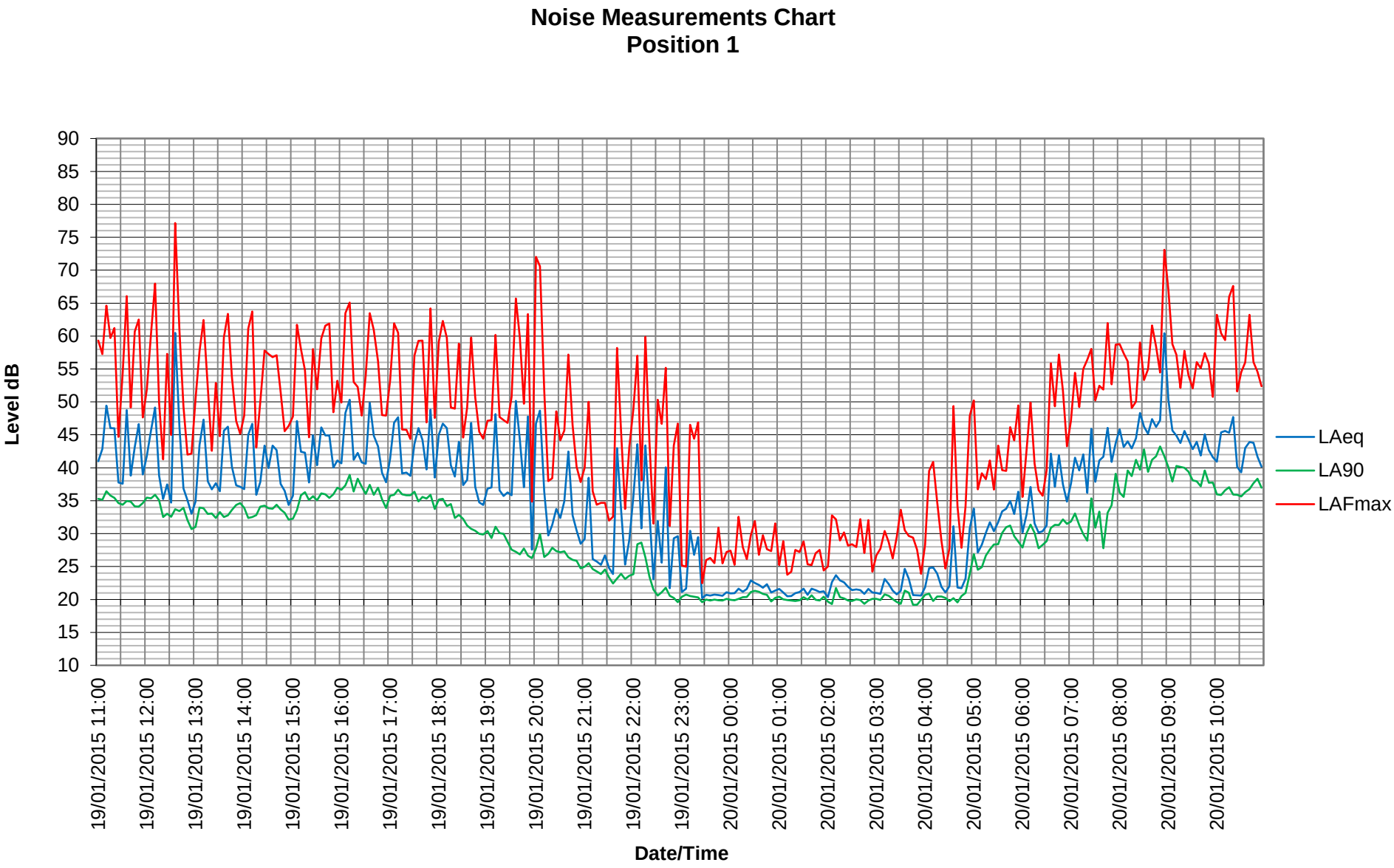
APPENDIX A

Measurement Position

Noise Measurement
Position 1
Track
93.3m
Sinks
Star Beck
Issues
Kingsley Rd
refuse
turning
head
Kingsley Farm
field
access
visitor
parking
visitor
parking
common
area
KINGSLEY DRIVE
htarchitects
York Place Studio
8 Britannia Street
Leeds, LS1 2DZ
T: 0113 244 3457
E: info@htcarchitects.co.uk
www.htcarchitects.co.uk
Client
Mr. Chippindale.
Project
Proposed Kingsley Farm
Redevelopment
Drawing title
Proposed Site Layout, Option 6.
Drawn By PJD
Checked By -
Scale 1:1000 @ A3
Date 20.11.12
Drawing no. 1080.06
Revision -

APPENDIX B

Measurement Results


Noise Measurements Chart
Position 1
Level dB
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
19/01/2015 11:00
19/01/2015 12:00
19/01/2015 13:00
19/01/2015 14:00
19/01/2015 15:00
19/01/2015 16:00
19/01/2015 17:00
19/01/2015 18:00
19/01/2015 19:00
19/01/2015 20:00
19/01/2015 21:00
19/01/2015 22:00
19/01/2015 23:00
20/01/2015 00:00
20/01/2015 01:00
20/01/2015 02:00
20/01/2015 03:00
20/01/2015 04:00
20/01/2015 05:00
20/01/2015 06:00
20/01/2015 07:00
20/01/2015 08:00
20/01/2015 09:00
20/01/2015 10:00
Date/Time
LAeq
LA90
LAFmax