



Orchard Hill, London

NOISE BASELINE MONITORING REPORT

1. Contractor Document Submittal History:

Revision:	Date:	Prepared by:	Checked by:	Approved by:	Reason for issue:
1.0	28/06/2019	James Ware	Peter Hewitt	Michael Elliott	For approval

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Introduction

Overview

Orchard Hill is a proposed educational development in Yiewsley, West London and will be funded through the ESFA (Education & Skills Funding Agency) Schools Framework. The development will involve the demolition of the existing Young People's Academy and the construction of two new schools; Orchard Hill Special Free School (Young People's Hub), and Orchard Hill Alternative Provision Free School (Young People's Academy). This will enhance the areas' ability to meet the demands for further special educational needs facilities.

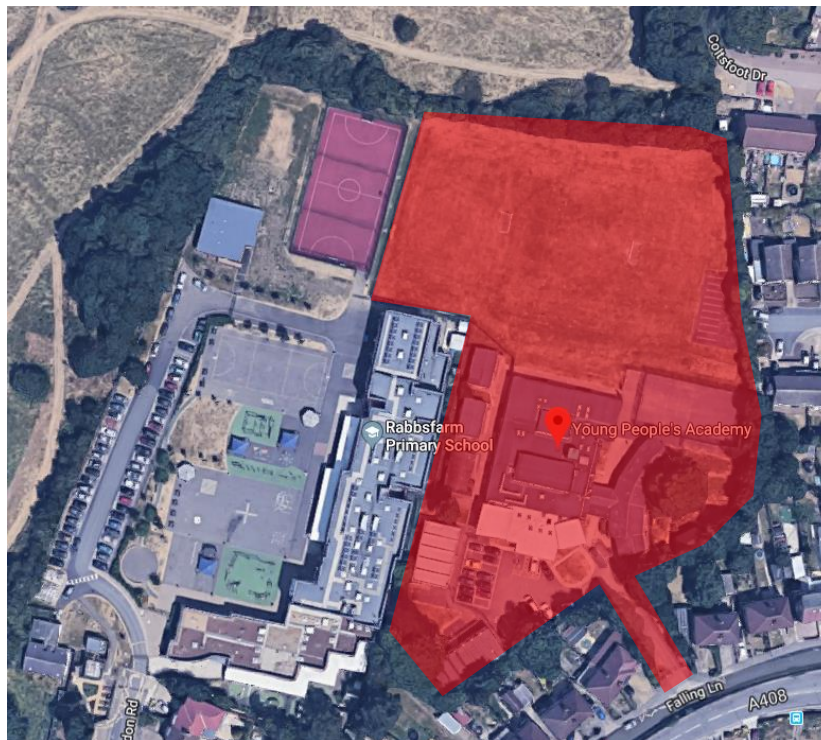


Figure 1 – Noise background monitoring location map for Orchard Hill with the proposed site area displayed in red shading (Imagery © 2019 Google, Map data © 2019 Google).

The site is located on the northern side of Falling Lane in Yiewsley within the London Borough of Hillingdon. The area, as shown in *Figure 1*, is primarily residential with properties in Leacroft Close and Falling Lane bounding the plot to the east and south, respectively. It is also bordered by a public open space to the north and Rabbsfarm Primary School to the west.

This report will discuss and show the noise levels that have been recorded between 7th and 12th June 2019, prior to construction phases. Monitoring took place at three locations on the perimeter of the existing school site.

Reference reports

The following documents have been consulted and are complied with in the preparation of this report:

- Guidelines for Noise Impact Assessment (Draft) – Institute of Acoustics & Institute of Environmental Management & Assessment, 2002;
- Calculation of Road Traffic Noise (CRTN) – Department of Transport, 1988;
- Design Manual for Roads and Bridges (DMRB), 1994;
- British Standard BS 5228 Noise and Vibration Control on Construction and Open Sites, 2014;
- British Standard BS 4142 Method for rating industrial noise affecting mixed residential and industrial areas, 1997.

Readings

Noise – LAeq

This value represents the average A-weighted (adjusted to remove frequencies not audible to human ears) decibel values. This will therefore relate more closely to sustained instances of noise, which are generally the environmental hazard over which a construction site will require the greatest degree of control.

Noise Monitor

The noise monitor used for the monitoring baseline for Orchard Hill is a Rion NL-52 Class 1 Sound Level Meter.

Location plan

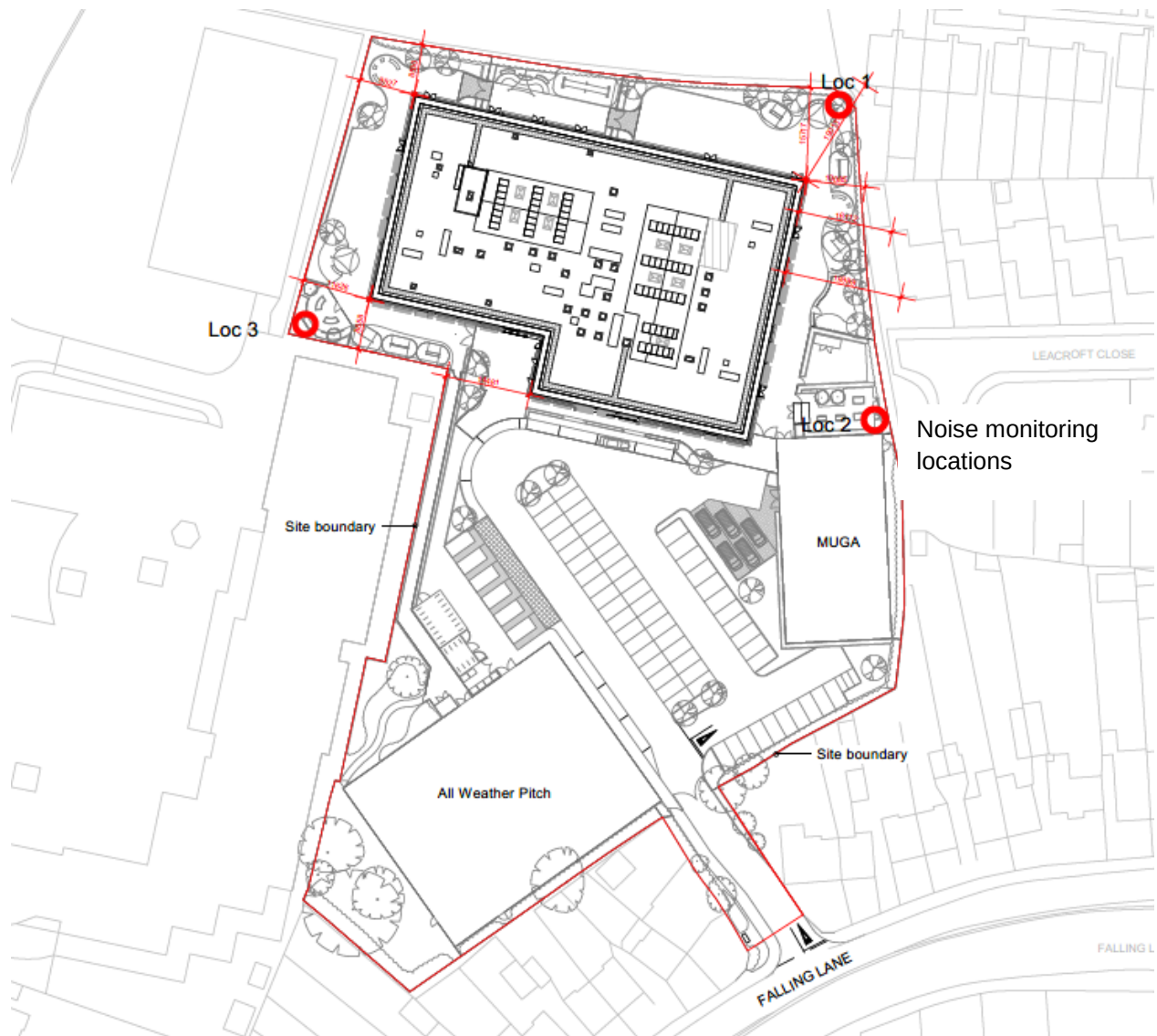
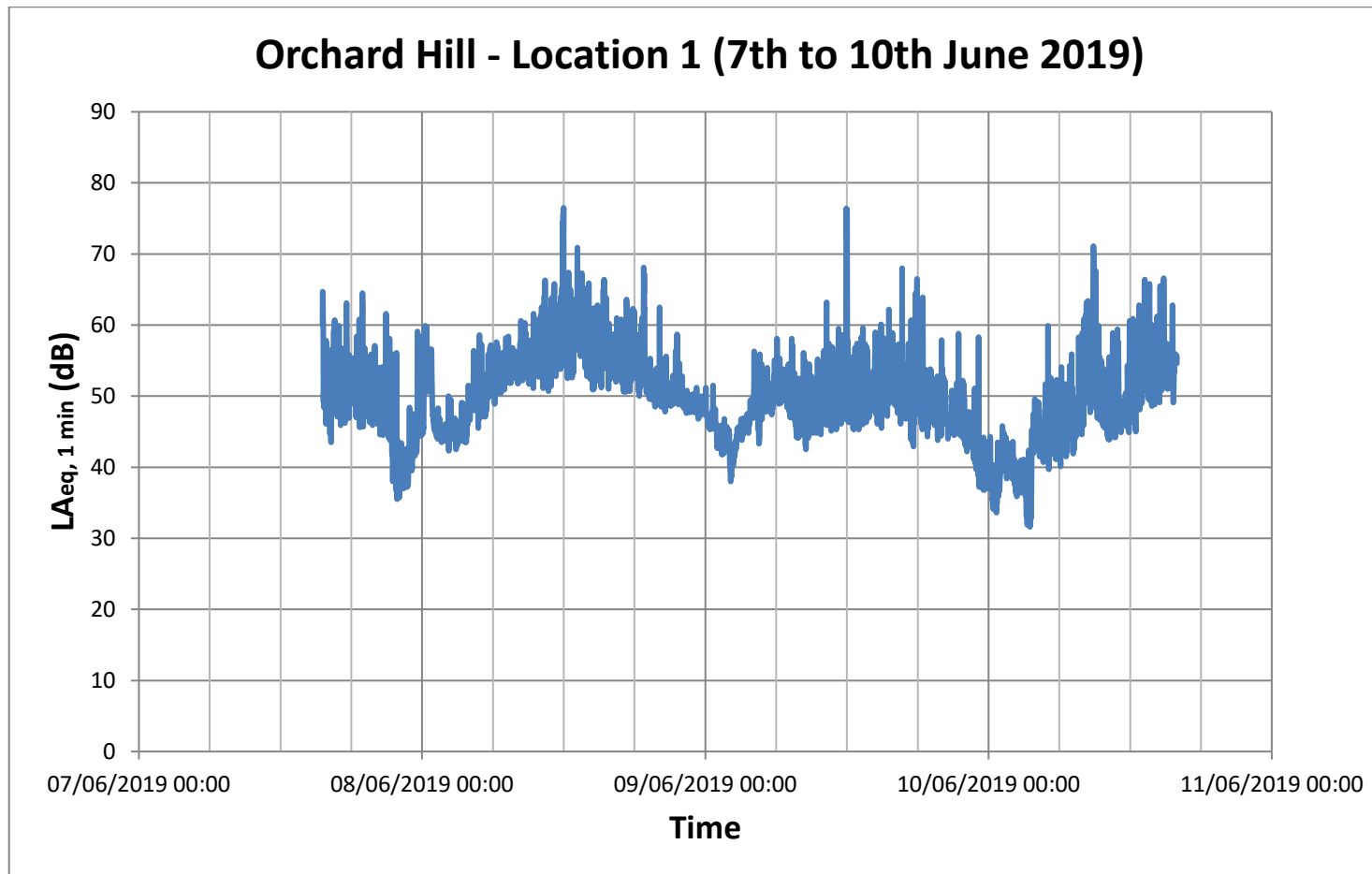
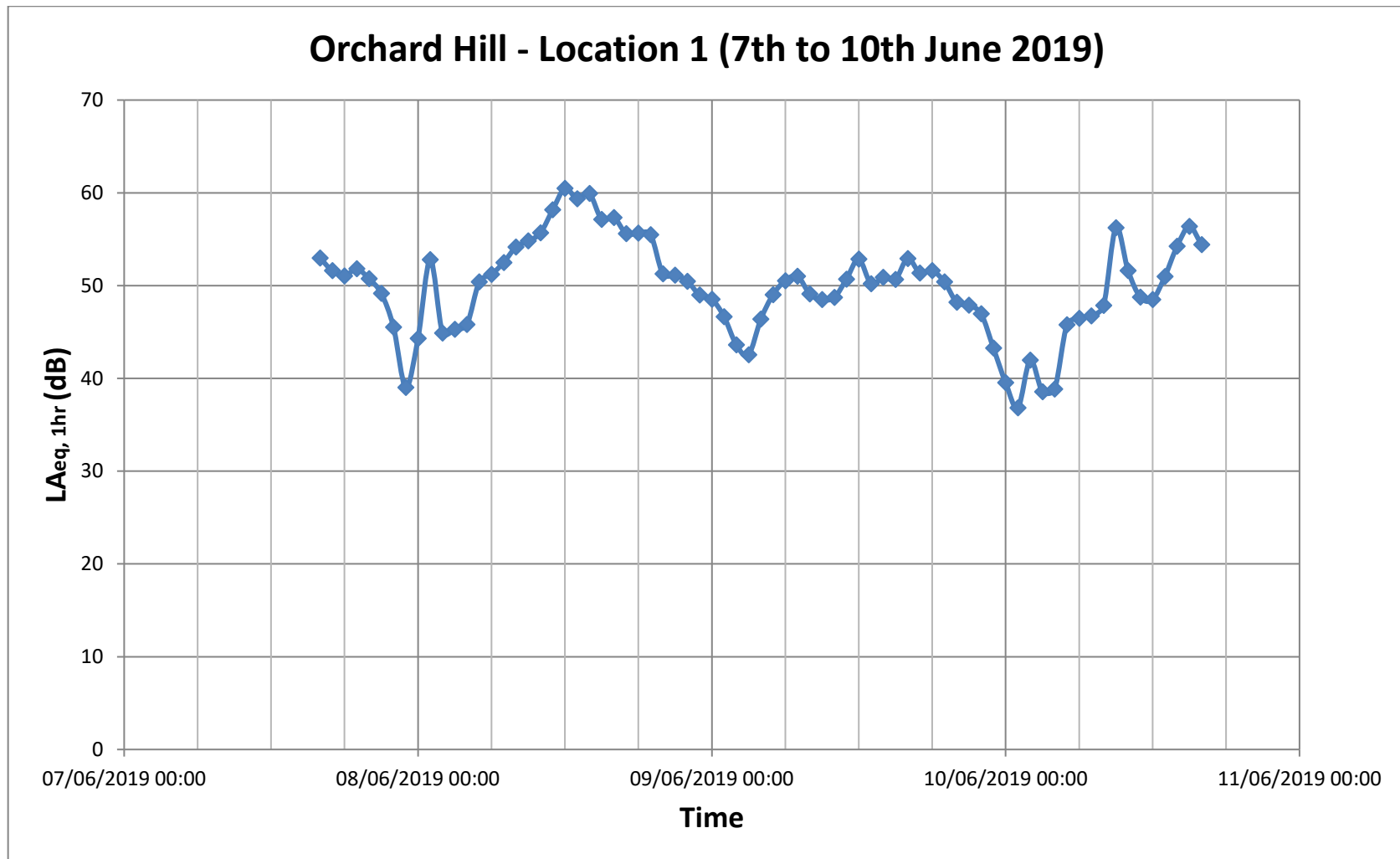


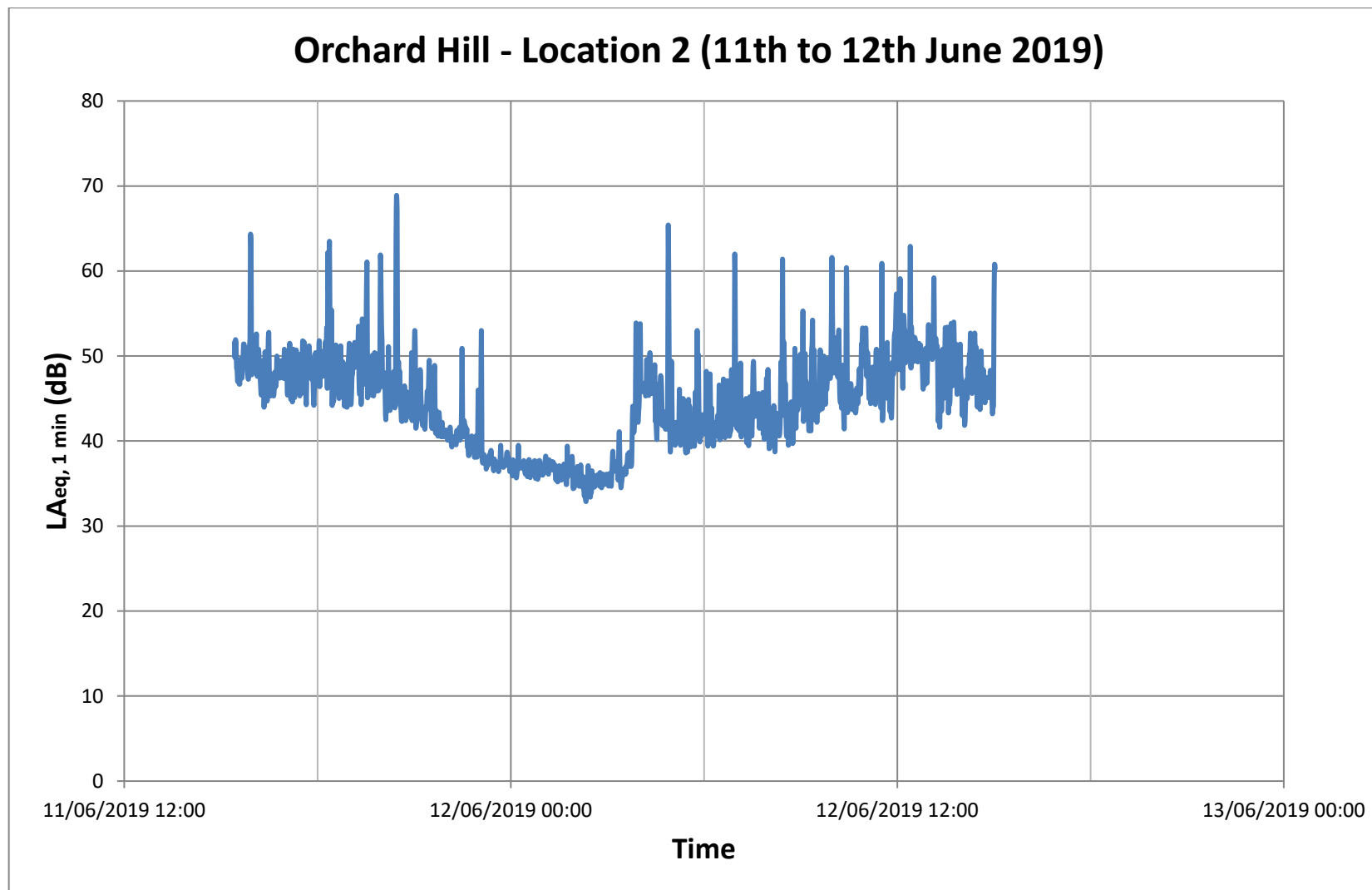
Figure 2 – Proposed project GA with noise monitoring locations labelled.

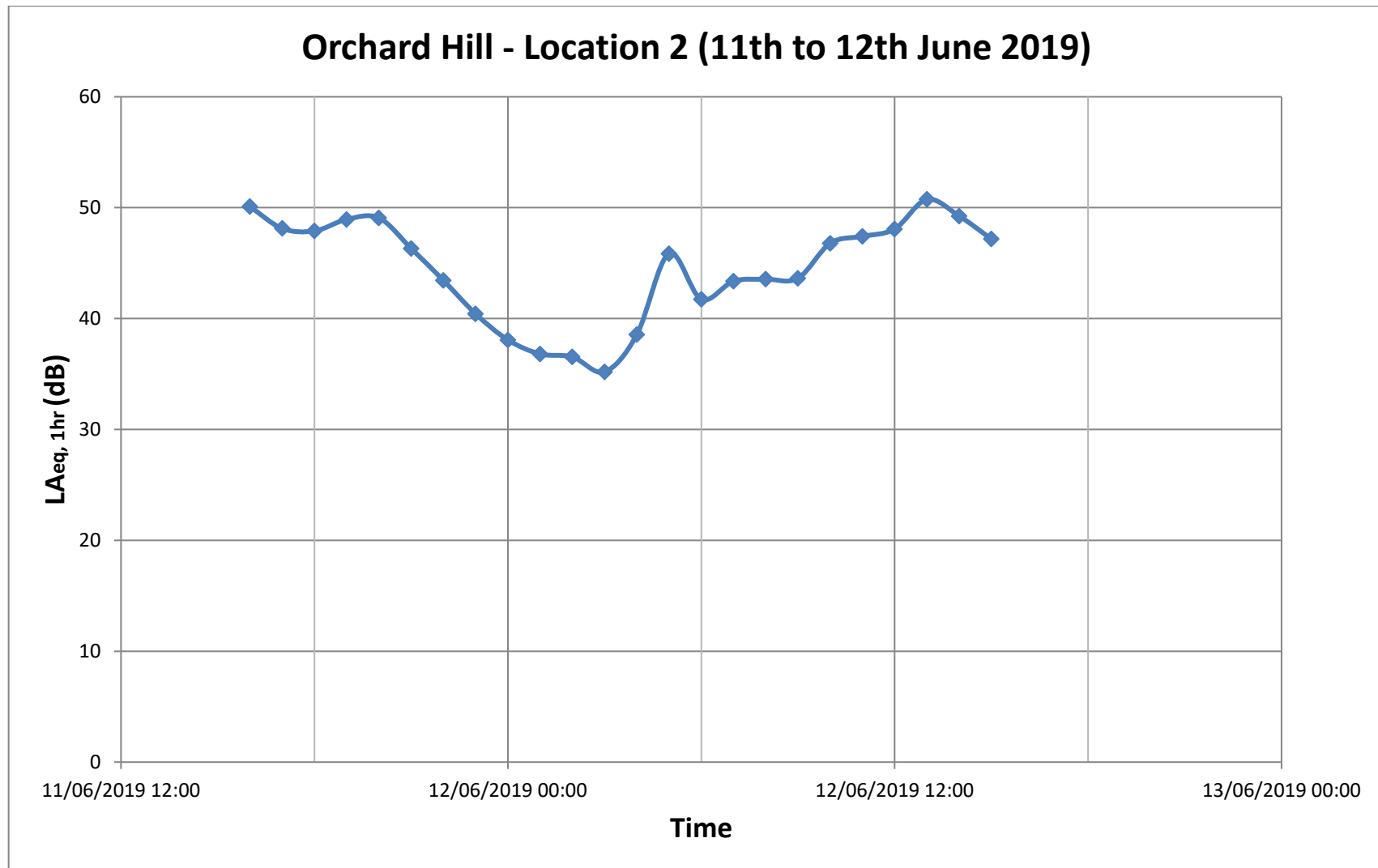
Results

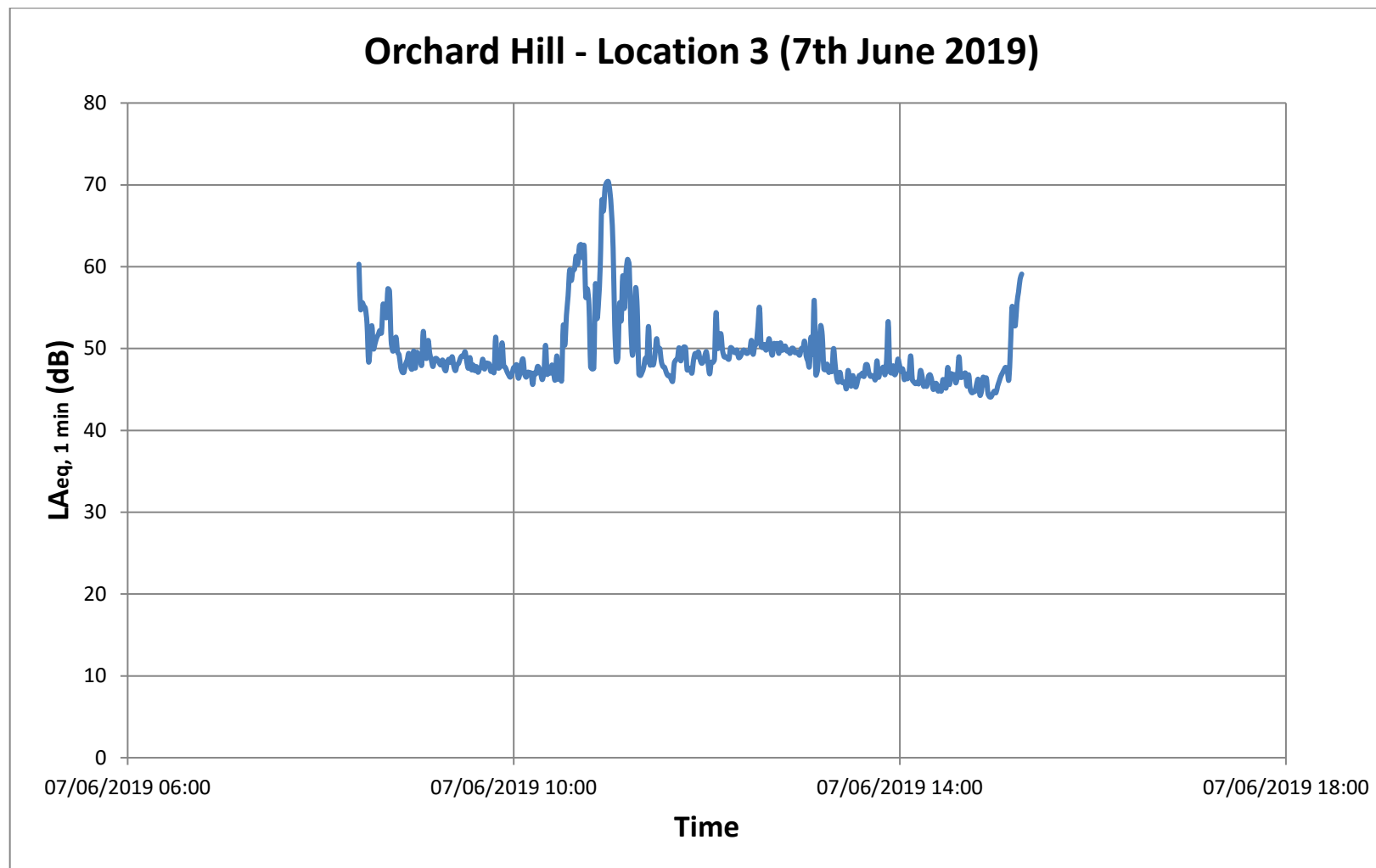
Location 1



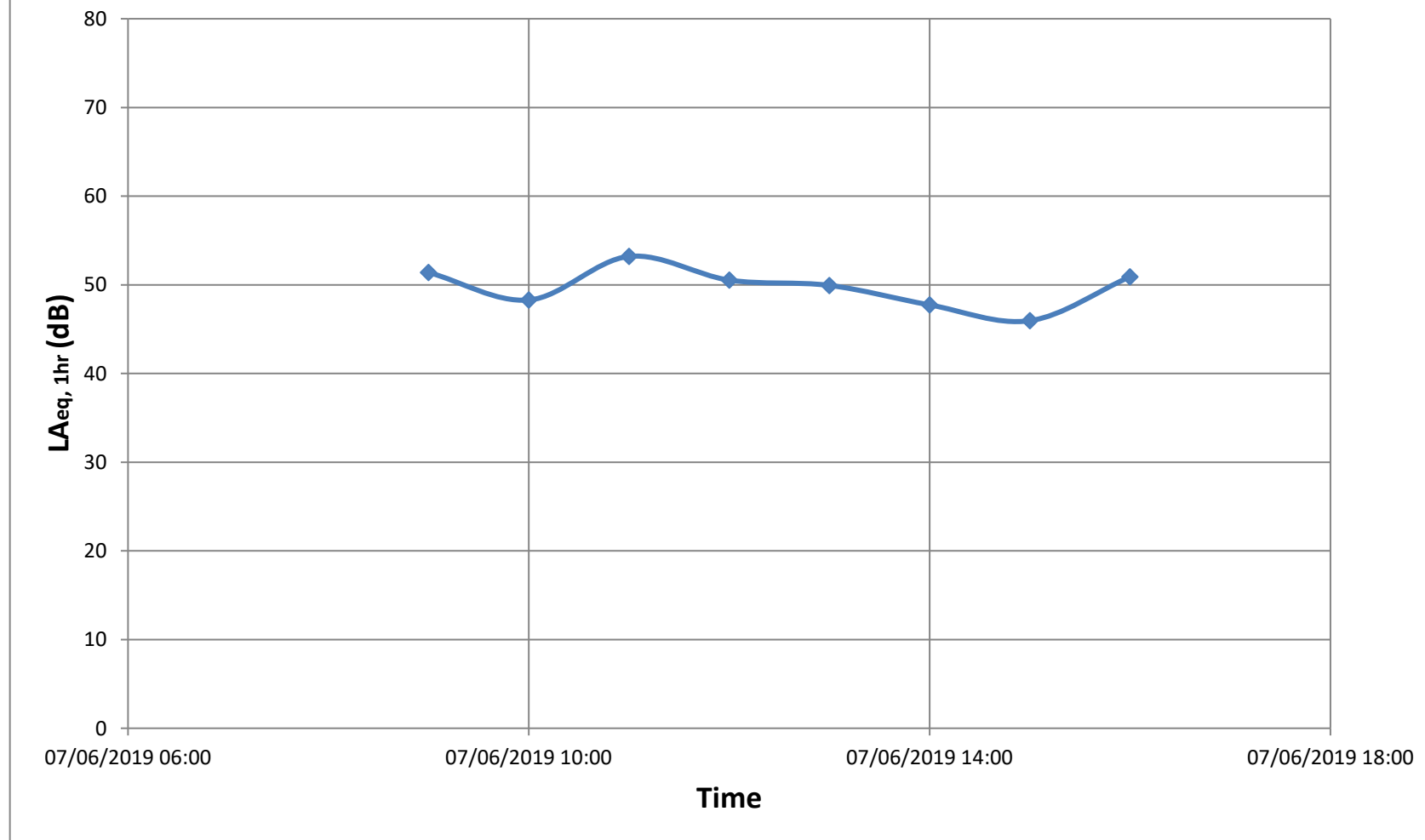


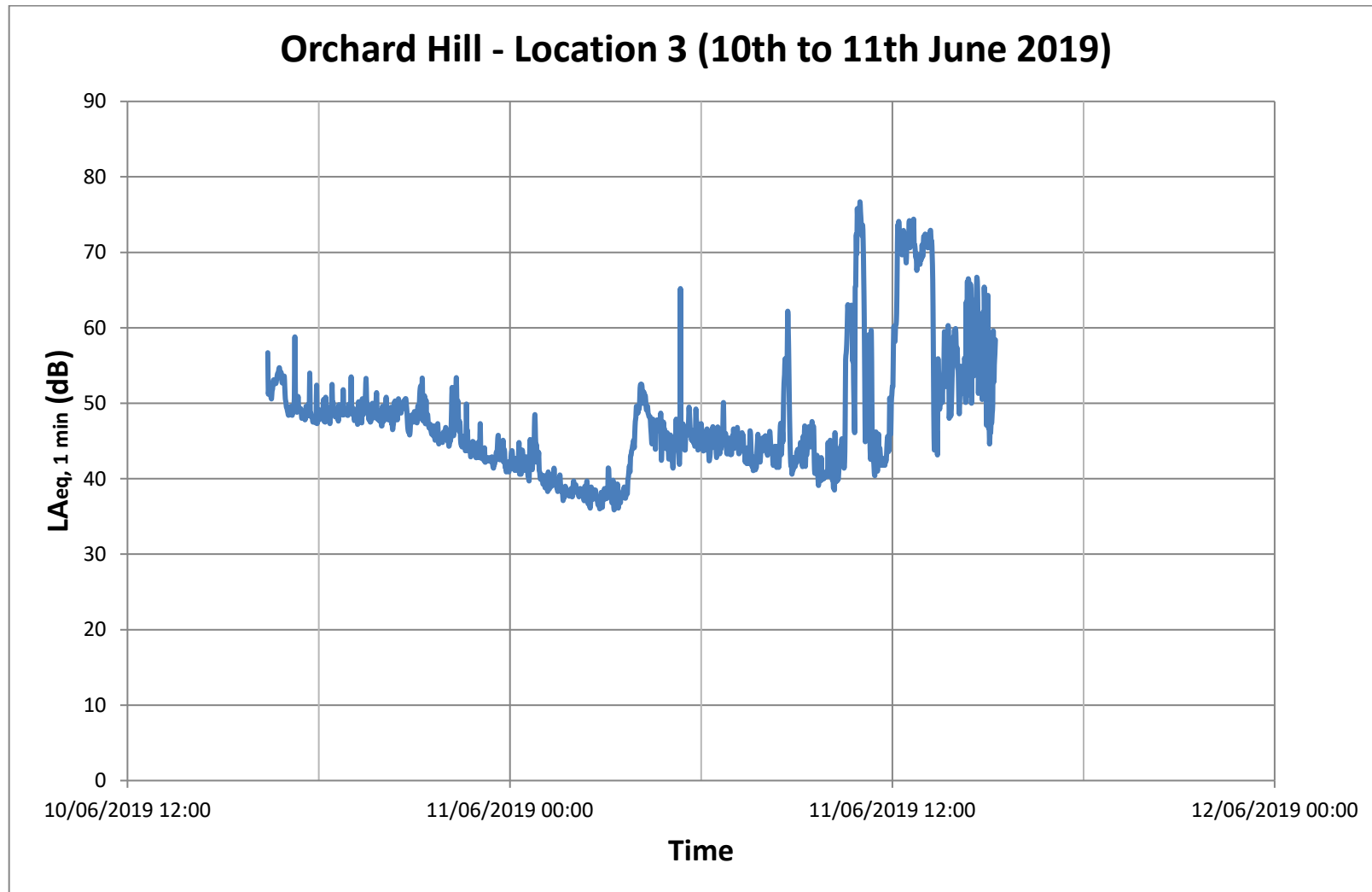


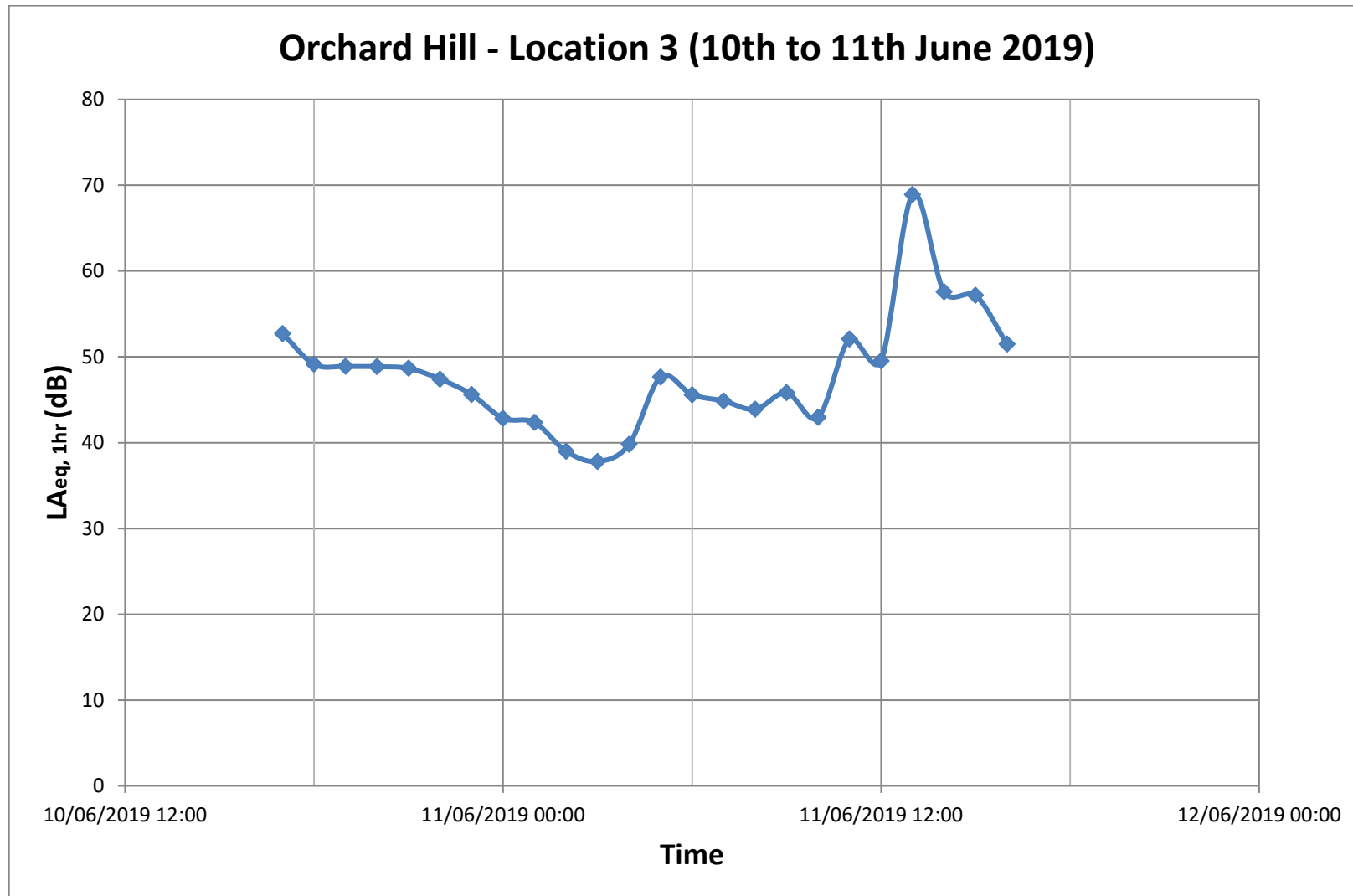




Orchard Hill - Location 3 (7th June 2019)







Orchard Hill – Noise Baseline Monitoring Report

Location	Date	Weather	LA _{eq, T} (dB)		
			Early hours (00:00-08:00)	Standard working hours (08:00-18:00)	Late hours (18:00-00:00)
1	07/06/2019	Inconsistent showers		51.62 (T = 2.5hrs)	46.76
	08/06/2019	Rainy	49.63	57.42	50.98
	09/06/2019	Inconsistent showers	47.36	50.84	46.04
	10/06/2019	Rainy	42.88	52.63 (T = 8hrs)	
2	11/06/2019	Moderate		48.48 (T = 2.5hrs)	44.38
	12/06/2019	Moderate	40.20	47.66 (T = 7hrs)	
3	07/06/2019	Rainy		49.53 (T = 7hrs)	
	10/06/2019	Rainy		50.47 (T = 2 hrs)	47.05
	11/06/2019	Moderate	42.62	53.37 (T = 8hrs)	

Table 1 – Noise background monitoring data across the three locations for differing times of day. T refers to the amount of time used in the average readings, if different to the amount highlighted for that period.

Conclusion

LA_{eq} time periods differ in the background monitoring during working hours due to limited times of access.

Location 1 LA_{eq, 10hr} values over the few days of monitoring average roughly 53 dB. This is slightly higher than the other positions and is potentially caused by the location being directly adjacent to a small garden containing livestock. The increase in noise levels was observed during both the installation and removal of the instrument.

Location 2 LA_{eq, T} working hours values averaged around 48 dB. When compared to the other locations this is the area with the lowest noise levels. This is likely to be the case due to being away from the commonly used areas such as school pathways as well as there being no clear noise source directly outside the site boundary. The LA_{eq, 1 min} data shows intermittent isolated peaks above 60 dB and as this was an unmanned survey the cause of these is unknown.

Location 3 LA_{eq, T} working hours values averaged around 52 dB. Notable increases to over 70 dB were experienced between 10:30-11:00 and 12:15-13:15 on 11th June. This location borders onto the Rabbsfarm Primary School's playground and the rises in data correlate with expected break times.

In conclusion, locations 1 and 3 are impacted by localised noise sources, while location 2 is in a more secluded area with minimal ambient noise.



Appendices

Appendix A – Equipment Calibration Certificate



CERTIFICATE OF CALIBRATION

Date of Issue: 04 October 2018

Certificate Number: TCRT18/1821

Issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

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Approved Signatory

K. Mistry



Customer
Select Plant Hire Company Ltd
3D Floor Tideway Central
Kirtling Street
Battersea
London
SW11 8BP

Order No. MO/30/161447

Description Sound Level Meter / Pre-amp / Microphone / Associated Calibrator

Identification	Manufacturer	Instrument	Type	Serial No. / Version
	Rion	Sound Level Meter	NL-52	00542917
	Rion	Firmware		1.8
	Rion	Pre Amplifier	NH-25	42946
	Rion	Microphone	UC-59	06497
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor type if applicable		NC-74-002

Performance Class 1

Test Procedure TP 2.SLM 61672-3 TPS-49

Procedures from IEC 61672-3:2006 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2002 YES Approval Number 21.21 / 13.02

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003

Date Received 03 October 2018

ANV Job No. TRAC18/10489

Date Calibrated 04 October 2018

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	Dated	Certificate No.	Laboratory
	06 October 2015	UCRT15/1258	7623

This certificate provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION



Certificate Number

TCRT18/1821

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Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52
SLM instruction manual ref / issue		11-03
SLM instruction manual source	Manufacturer	
Internet download date if applicable	N/A	
Case corrections available	Yes	
Uncertainties of case corrections	Yes	
Source of case data	Manufacturer	
Wind screen corrections available	Yes	
Uncertainties of wind screen corrections	Yes	
Source of wind screen data	Manufacturer	
Mic pressure to free field corrections	Yes	
Uncertainties of Mic to F.F. corrections	Yes	
Source of Mic to F.F. corrections	Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002	Yes	
Specified or equivalent Calibrator	Specified	
Customer or Lab Calibrator	Lab Calibrator	
Calibrator adaptor type if applicable	NC-74-002	
Calibrator cal. date	03 October 2018	
Calibrator cert. number	UCRT18/2010	
Calibrator cal cert issued by	0653	
Calibrator SPL @ STP	94.01	dB Calibration reference sound pressure level
Calibrator frequency	1001.98	Hz Calibration check frequency
Reference level range	25 - 130	dB

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15

Note - If a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	24.00	24.30	± 0.40 °C
Humidity	47.2	48.4	± 3.00 %RH
Ambient Pressure	101.41	101.35	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A	C	Z
	11.9	15.7	21.7
	dB	dB	dB
	UR	UR	UR

Uncertainty of the electrical self generated noise ±	0.12	dB
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The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with the Guide to the Expression of Uncertainty in Measurement published by ISO.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

END

Calibrated by: A Patel

R 1

Additional Comments

The instrument was received with swapped mic & pre-amp, the meter was re-aligned prior to calibration.

Appendix B – Site Images



Image 1 – Location 1 noise monitor set-up with proximity to livestock cage and local property's back garden shown.



Image 2 – Location 2 noise monitor set-up.



Image 3 – Location 2 noise monitor circled in red with adjacent fenced sports court displayed.



Image 4 – Location 3 noise monitor set-up with Rabbsfarm Primary School playground in the background.