
High Speed Rail
(London-West Midlands)
Noise ! «^a ¥«® £&j ¬«®
National Temperance Hospital
February 2017





Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited,
Two Snowhill,
Snow Hill Queensway,
Birmingham B4 6GA

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.

© High Speed Two (HS2) Limited, 2017, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v2.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2 **OGL** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



Printed in Great Britain on paper containing at least 75% recycled fibre.

Unattended Noise Monitoring Report

Period: 30 January to 26 February 2017

Project No EEMC/065/2016
Report No. EEMC-NTH-065.013 – NTH, HS2 Rev 00
Client: Keltbray Limited
Title: EEMC/065-013-NTH, HS2 - Unattended Noise Monitoring Report No.13
Period: 30 January - 26 February 2017

Details of Noise Monitor at Receptor Point 1 (RP1)

ID Reference	RP1
Location	132 Hampstead Road (Second floor terrace)
Instrument:	Rion NL-52
Serial Number:	453872
Installation Date:	28/10/2016
Onsite Calibration:	28/10/2016
Laboratory Calibration: See attached certificate (Appendix 1)	03/10/2016 UCRT16/1301

This report was checked and approved by:



Ian Hooper MSc IEng MIOA

Contact Information:

European Environmental Monitoring & Consultancy (EEMC) Ltd.
Suite 31
Chessington Business Centre
Chessington, Surrey
KT9 1SD
t: 0208 3973 269
m: 07483222692
e: info@eemc.london
e: ian.hooper@eemc.london
w: www.eemc.london

Map of monitoring location



Photograph of monitor



1.0 Introduction

European Environmental Monitoring and Consultancy (EEMC) Limited is appointed by Keltbray to undertake environmental monitoring during the demolition works phase at the National Temperance Hospital project which is in the London Borough of Camden (LBC). Noise monitoring equipment has been installed at three locations and measured noise levels are recorded continuously.

This report presents the unattended noise data measured and recorded in the period 30 January to 26 February 2017 at position RP1. This report should be read with the CoPA section 61 Prior Consent Application submitted to LBC for the National Temperance Hospital demolition phase.

Demolition works are limited to 08:00-18:00 hours Monday to Friday and 08:00-13:00 hours on Saturday with no works on Sundays or public holidays.

This report presents the noise levels measured and recorded at position RP1.

The works in this period were mainly as follows:

- Striking internal scaffold to the courtyard
- Striking external scaffold to Hampstead Road and Cardington Street
- Post-asbestos soft strip to the ground floor
- Demolition of walls and floor slab to the third floor of building North
- Demolition of main building Party Wall (chimney and roof)
- Demolition of main building West second and third floors
- Demolition of main building East third and second floor
- Temporary weathering to party wall
- Cranage twice a week

The site is in the London Borough of Camden and the surrounding area is populated by residential blocks, various types of businesses such as hotels, a community center, the Maria Fidelis School and UCL, all of which could be affected by demolition and the associated activities.

2.0 Instrumentation

All noise monitoring units are Rion NL-52 Class 1 noise monitoring systems, housed in weather proof environmental protected cases with an all-weather protected remote microphone (see photo). Calibration certificates for the noise monitoring system is attached as Annex 1. The system was field calibrated at the time of installation on site.

3.0 Methodology

Keltbray requested (EEMC) Limited to undertake unattended noise monitoring at three agreed locations around the site. The monitoring locations were agreed with the Environmental Health Officer (EHO) of Camden. The unattended noise monitoring presented in this report was undertaken during demolition works on site. All results are recorded (LAeqT) by data logging equipment within each unit.

Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action level at RP1 is 74dB LAeq10hour. This level is indicated by the red line on the graphs.

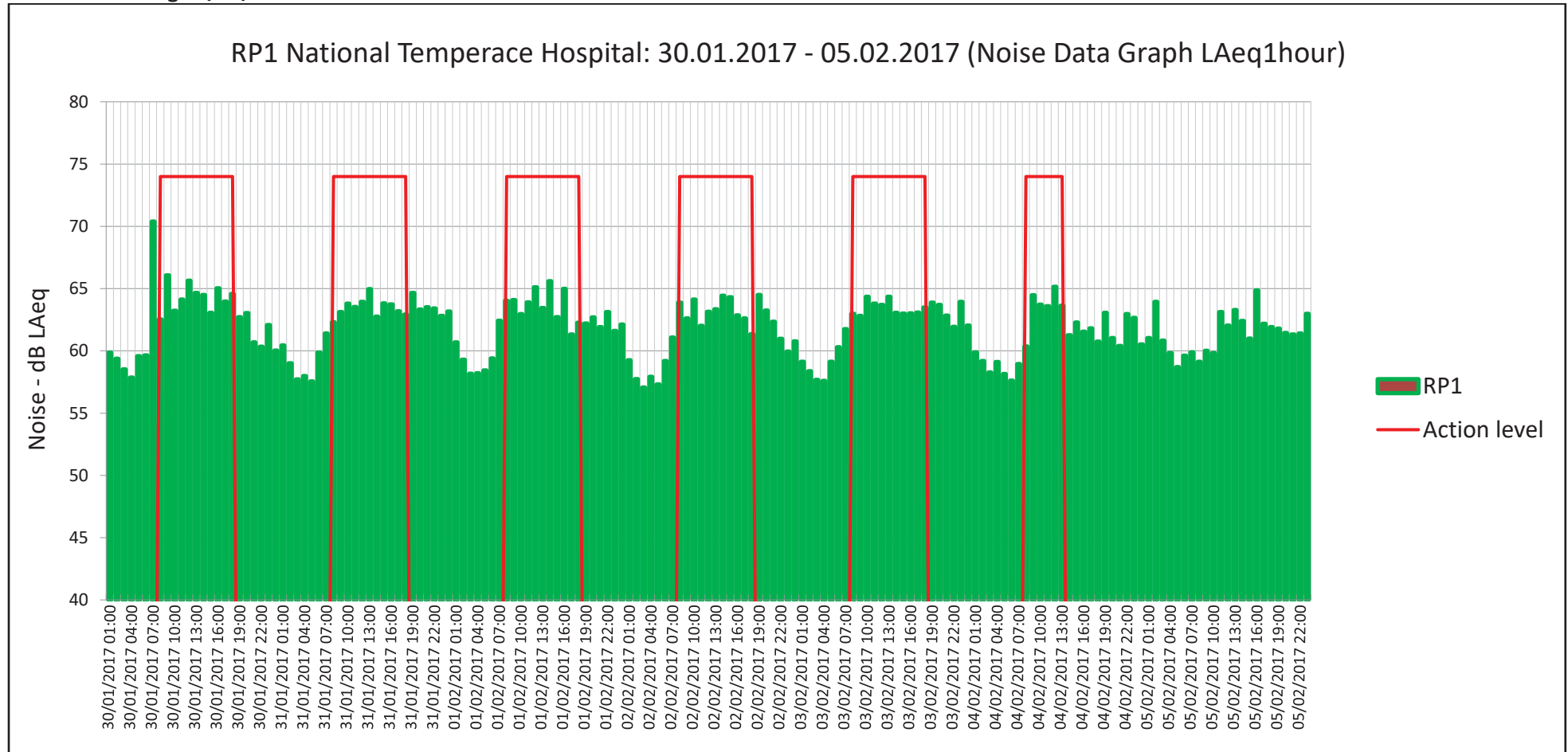
The measured unattended noise levels can be used to compare with measured and recorded noise levels during other demolition activities and periods.

4.0 Measurement Results

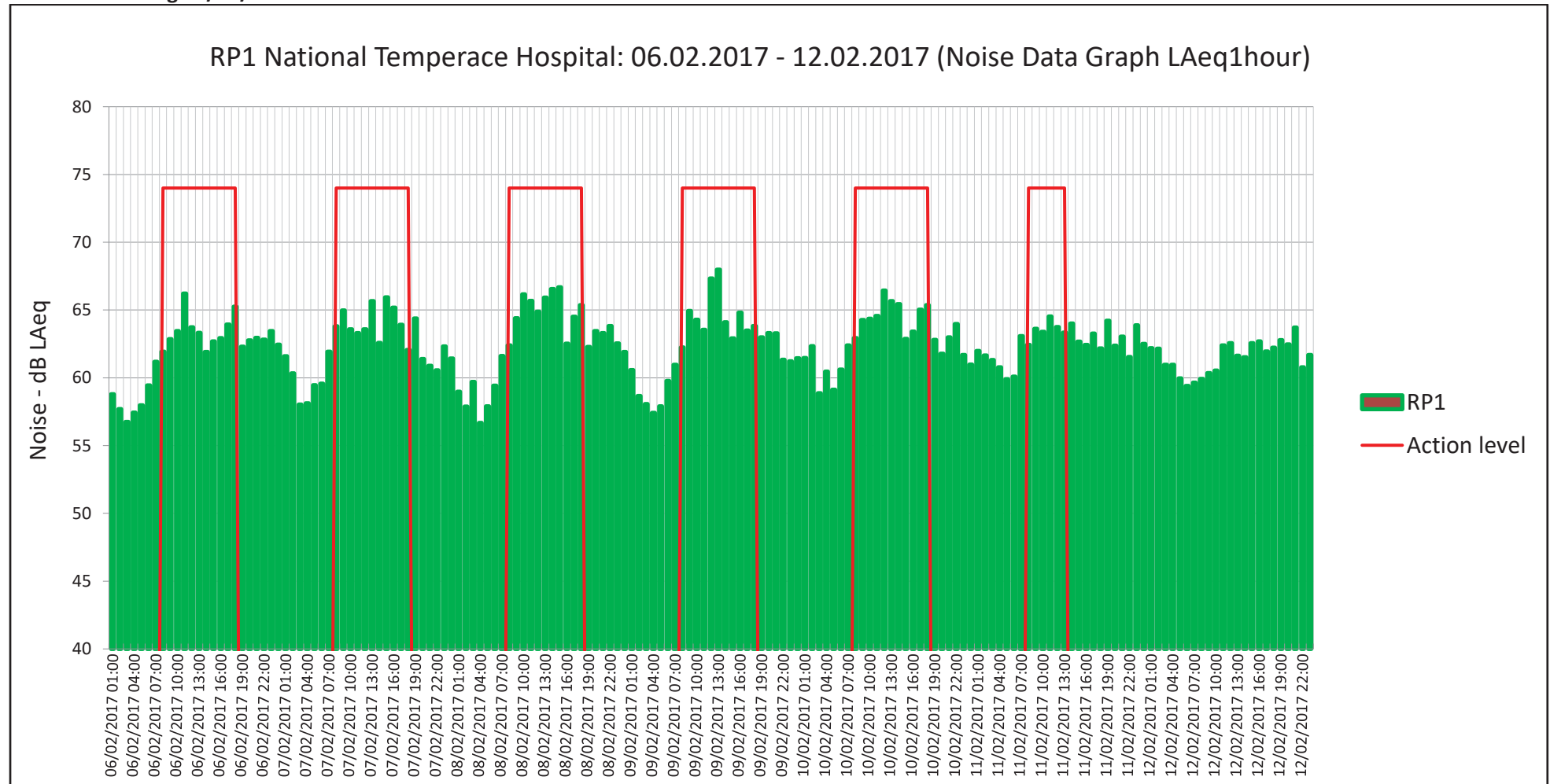
The recorded unattended noise measurements in this period are presented as graphs in section 5.0 of this report using LAeq1hour data points.

5.0 Noise Monitoring Graphs

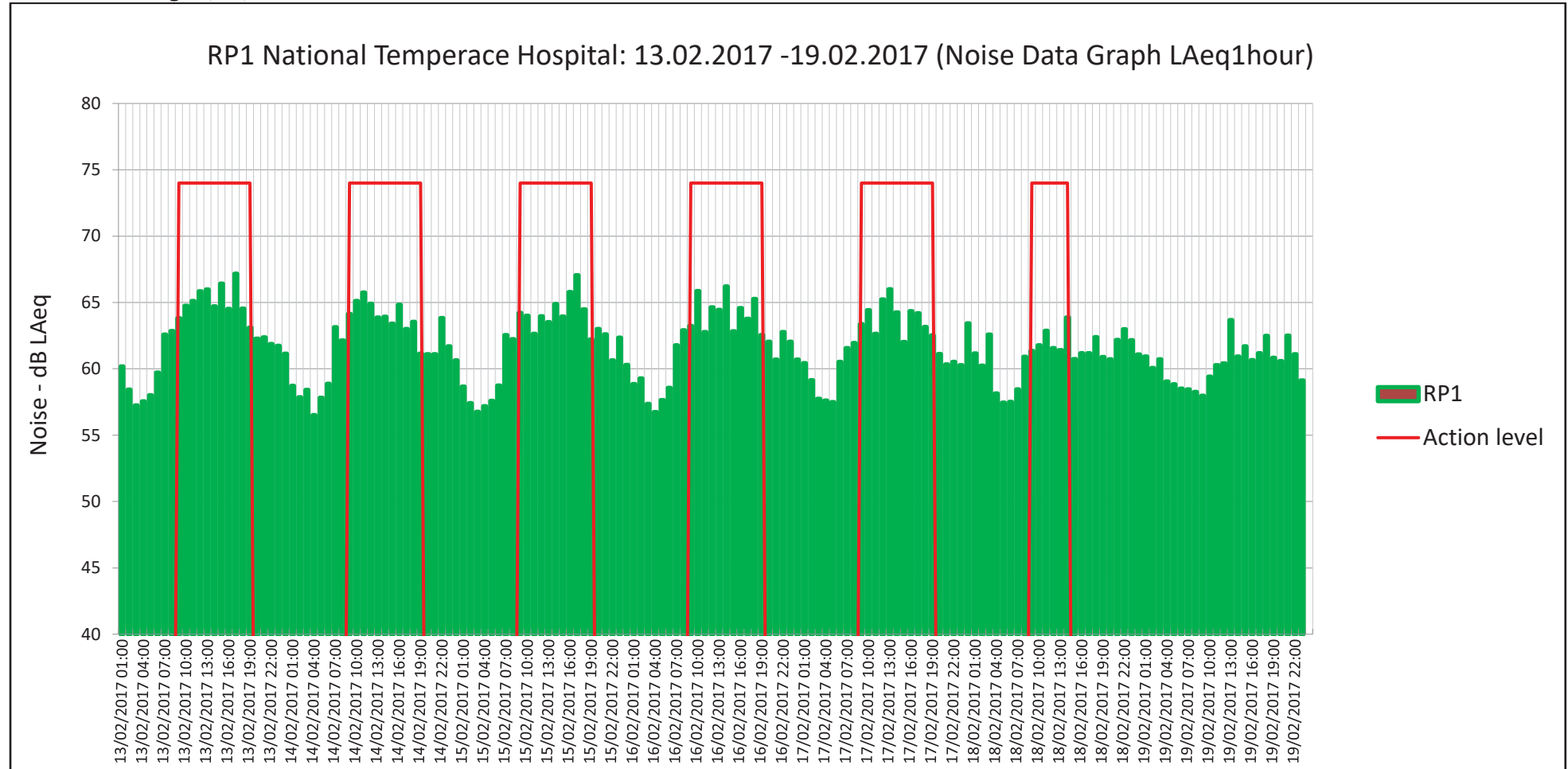
RP1 Week ending 05/02/17



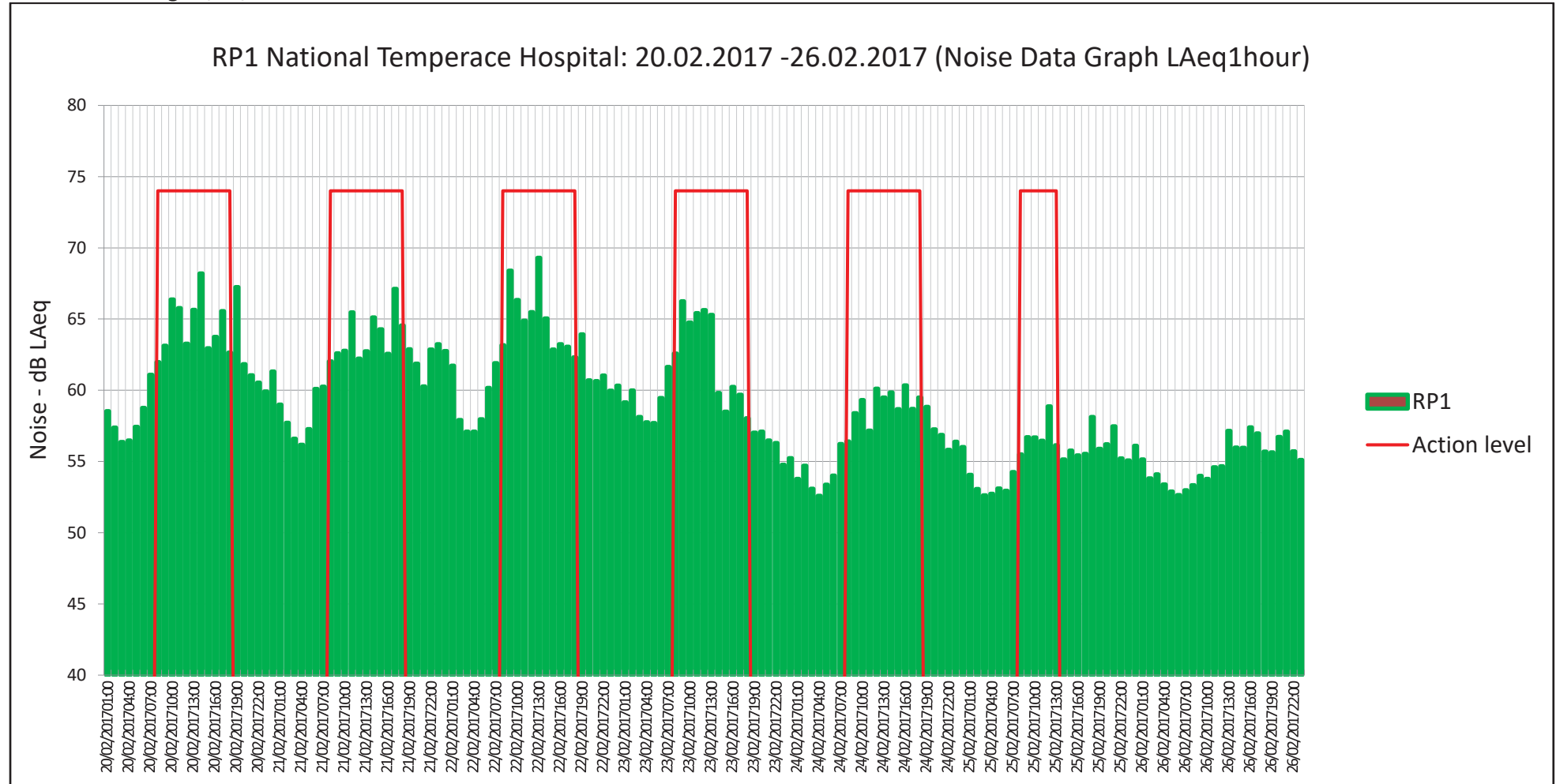
RP1 Week ending 12/02/17



RP1 Week ending 19/02/17



RP1 Week ending 26/02/17



6.0 Discussion

Unattended ambient noise monitoring has been undertaken during works for phase 1 at National Temperance Hospital at RP1.

The activities in the period from 30 January 2017 to 26 February 2017 would include those listed on page 4 of this report.

The daily LAeq10hour from 08.00 to 18.00 Monday to Friday, LAeq10hour from 08.00 to 13.00 on Saturday and the LAeq1hour shoulder hours were as Tables 6.1 to 6.4.

dBLAeq10hours						dBLAeq5hours
Date	30/01/2017	31/01/2017	01/02/2017	02/02/2017	03/02/2017	04/02/2017
RP1	64.58	63.61	63.83	63.18	63.50	64.16
Action Level	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	62.53	62.29	64.03	63.87	62.98	60.36
6 - 7 PM	62.71	64.66	62.20	64.48	63.88	61.25

Table 6.1

dBLAeq10hours						dBLAeq5hours
Date	06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017	11/02/2017
RP1	63.81	64.25	65.41	65.05	64.85	63.74
Action Level	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	61.92	63.81	62.39	62.25	62.92	62.42
6 - 7 PM	62.30	64.39	62.29	62.98	62.81	64.01

Table 6.2

dBLAeq10hours						dBLAeq5hours
Date	13/02/2017	14/02/2017	15/02/2017	16/02/2017	17/02/2017	18/02/2017
RP1	65.40	64.32	64.62	64.51	64.11	61.83
Action Level	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	62.84	62.14	62.23	62.91	61.95	60.92
6 - 7 PM	63.10	61.14	62.22	62.53	62.52	60.90

Table 6.3

dBLAeq10hours						dBLAeq5hours
Date	20/02/2017	21/02/2017	22/02/2017	23/02/2017	24/02/2017	25/02/2017
RP1	65.10	64.23	65.72	63.42	59.24	57.09
Action Level	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	61.96	62.03	63.16	62.58	56.39	55.49
6 - 7 PM	67.24	62.87	63.93	57.02	58.82	55.14

Table 6.4

There were no exceedances of the 74dBLAeq10hour action level in this period, the measured and recorded levels being significantly below this. The measurements recorded for the shoulder hours LAeq1hour did not exceed the action level and additionally were also below the relevant LAeq10hour measured for that day.

Unattended Noise Monitoring Report

Period: 30 January to 26 February 2017

Project No: EEMC/065/2016

Report No.: EEMC-NTH-065.014 – NTH, HS2 Rev 00

Client: Keltbray Limited

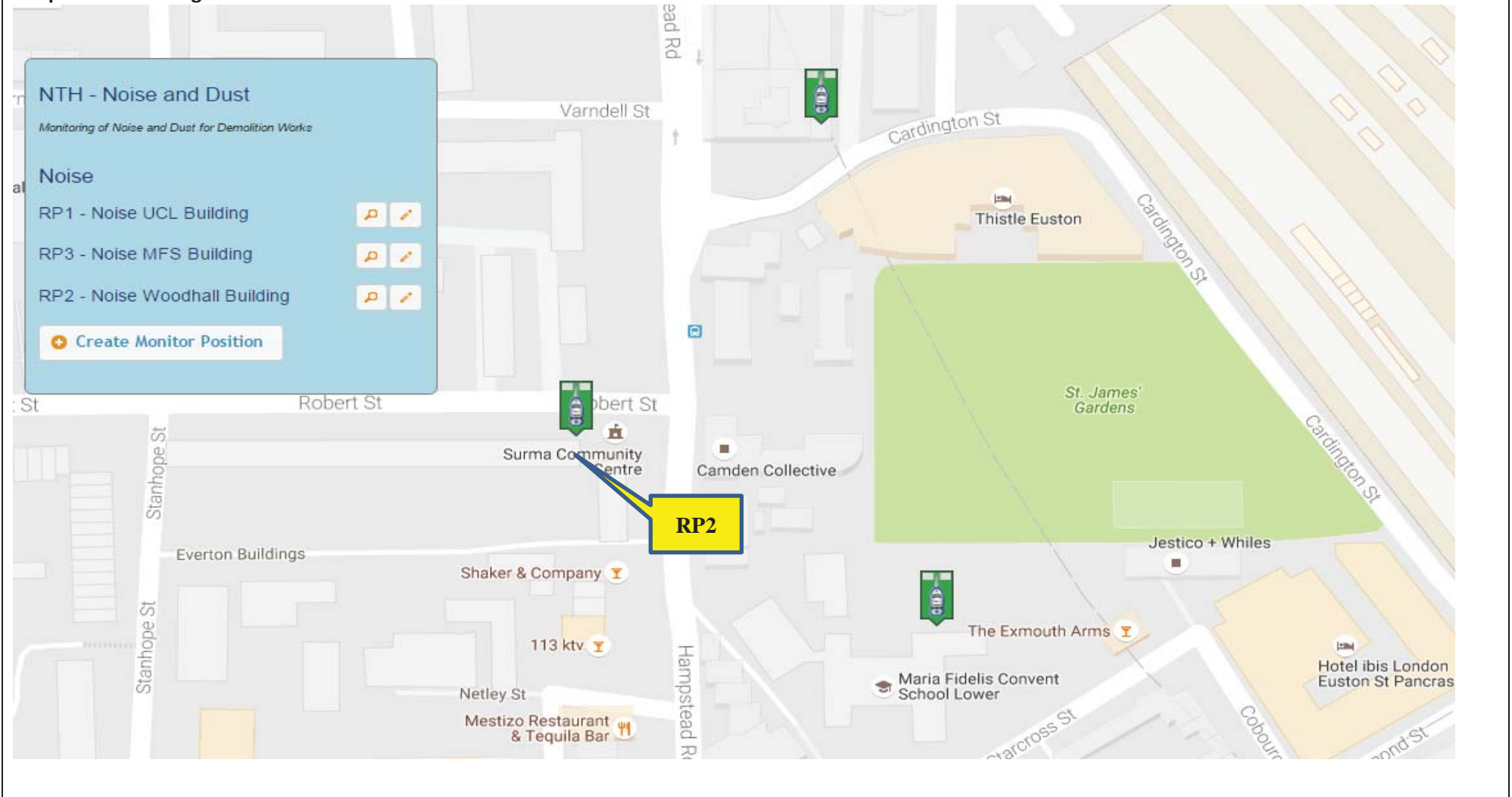
Title: EEMC/065-014-NTH, HS2 - Unattended Noise Monitoring Report No.14

Period: 30 January - 26 February 2017

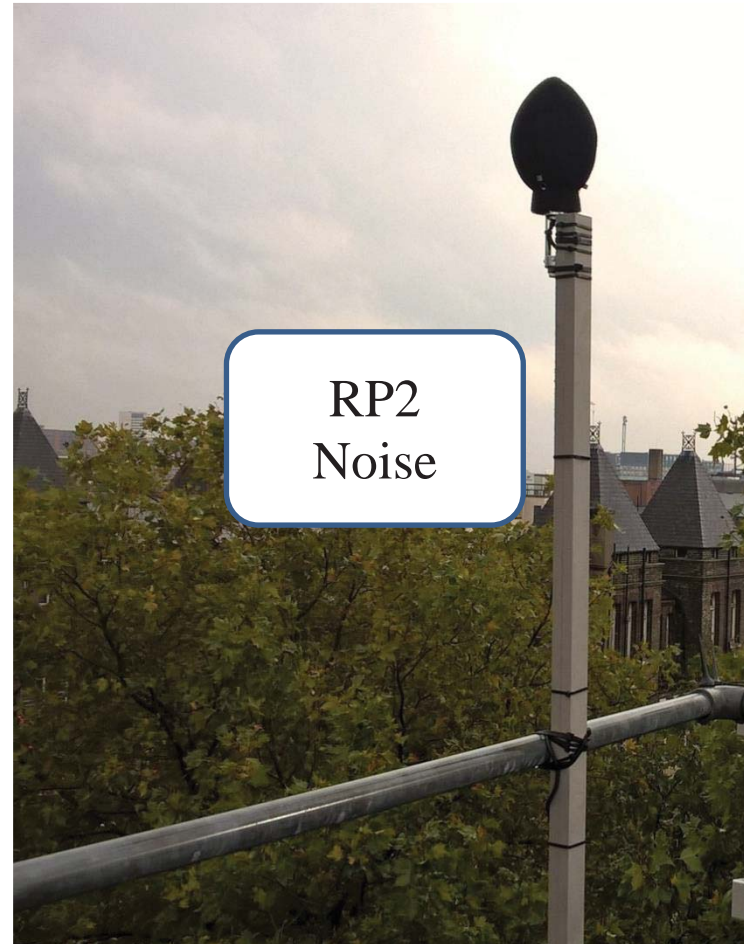
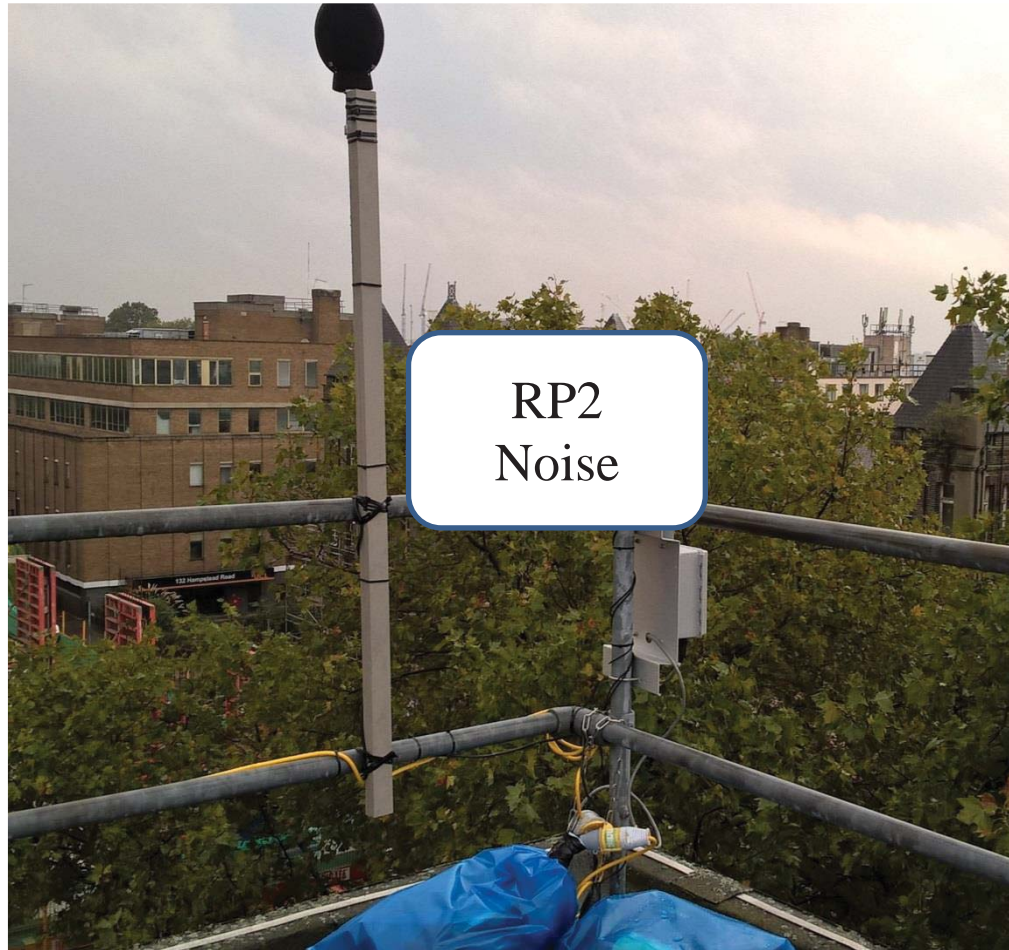
Details of Noise Monitor at Receptor Point (RP2)

ID Reference	RP2
Location	Terrace of Woodhall residential block (Hampstead Road/Robert Street intersection)
Instrument:	Rion NL-52
Serial Number:	00654028
Installation Date:	13/10/2016
Onsite Calibration:	13/10/2016
Laboratory Calibration: See attached certificate (Appendix 1)	03/10/2016 UCRT16/1296

Map of monitoring location



Photos of monitor



1.0 Introduction

European Environmental Monitoring and Consultancy (EEMC) Limited is appointed by Keltbray to undertake environmental monitoring of the demolition works phase at the National Temperance Hospital project located in the London Borough of Camden (LBC). Noise monitoring equipment has been installed at three locations and measured levels are to be recorded continuously.

This report details the unattended noise data measured and recorded in the period from 30 January to 26 February 2017 at RP2. This report should be read with the section 61 Application submitted to LBC for the National Temperance Hospital demolition works.

Site operations will be limited to 08:00-18:00 hours Monday to Friday and 08:00-13:00 hours on Saturday with no works on Sundays or public holidays.

This report presents the noise levels (LAeqT) measured and recorded at position RP2 during demolition associated activities on the site.

The potentially noisy works on site in this period were:

- Striking internal scaffold to the courtyard
- Striking external scaffold to Hampstead Road and Cardington Street
- Post-asbestos soft strip to the ground floor
- Demolition of walls and floor slab to the third floor of building North
- Demolition of main building Party Wall (chimney and roof)
- Demolition of main building West second and third floors
- Demolition of main building East third and second floor
- Temporary weathering to party wall
- Cranage twice a week

The site is in the London Borough of Camden (LBC). The surrounding area is populated by residential blocks, various types of businesses such as hotels, a community center and the Maria Fidelis School and UCL, all of which could be affected by demolition and associated activities.

2.0 Instrumentation

All noise monitoring units are Rion NL-52 Class 1 noise monitoring systems are housed in a weather proof environmental hard case and an all-weather protected remote microphone (see photo). Calibration certificates for the noise monitoring system attached as Annex 1. The system was field calibrated on installation on site.

3.0 Methodology

Keltbray requested (EEMC) Limited to undertake unattended noise monitoring at three agreed locations near the site. Noise trigger action levels were agreed with the Environmental Health Officer (EHO) of Camden. The unattended noise monitoring presented in this report was undertaken while early demolition activity was ongoing on site. All results are presented (LAeq1hour).

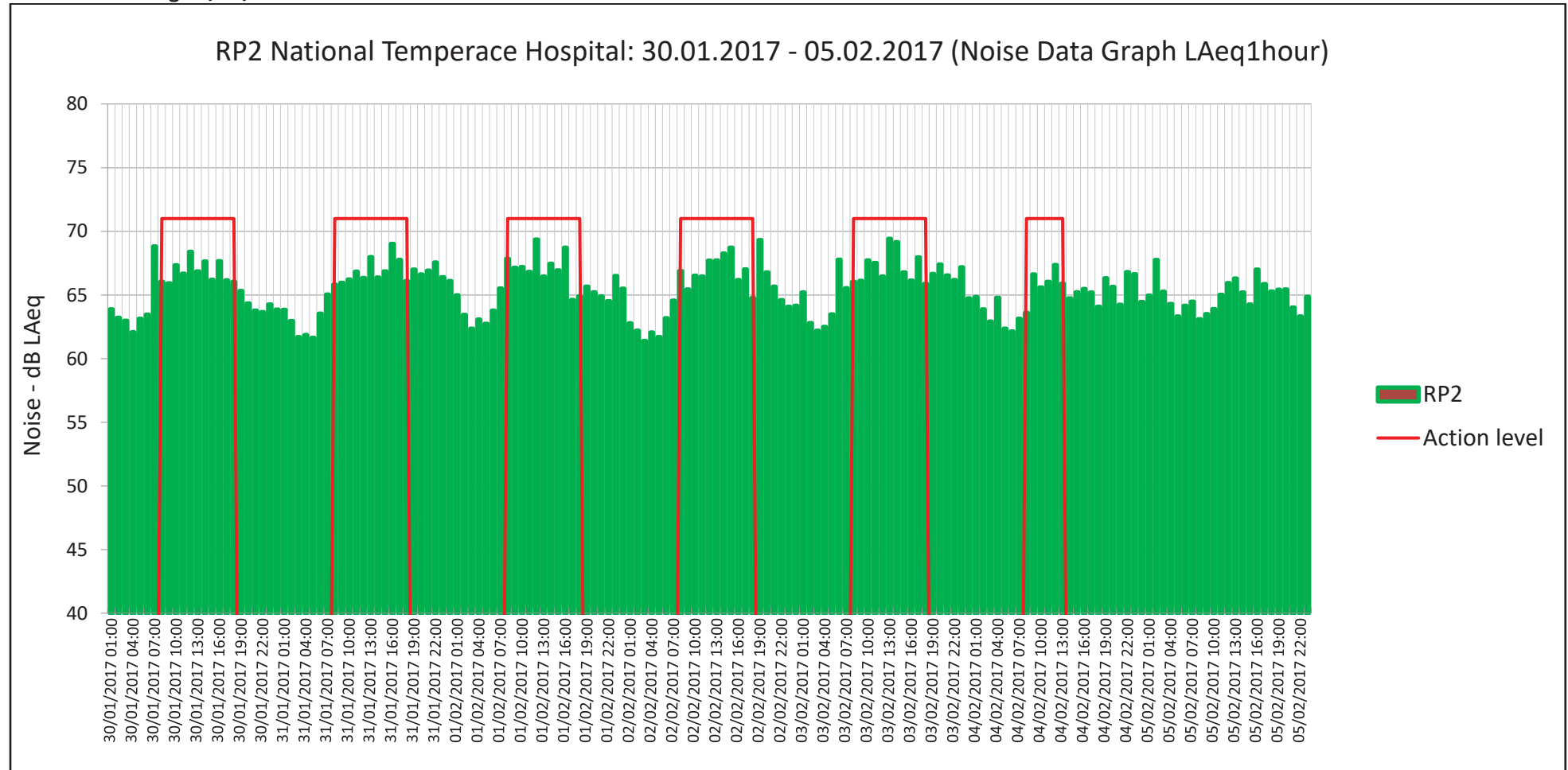
Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with London Borough of Camden to be the core hours within which noisy demolition activities can proceed. The agreed action level at RP2 is 71dBLAeq10hour.

4.0 Measurement Results

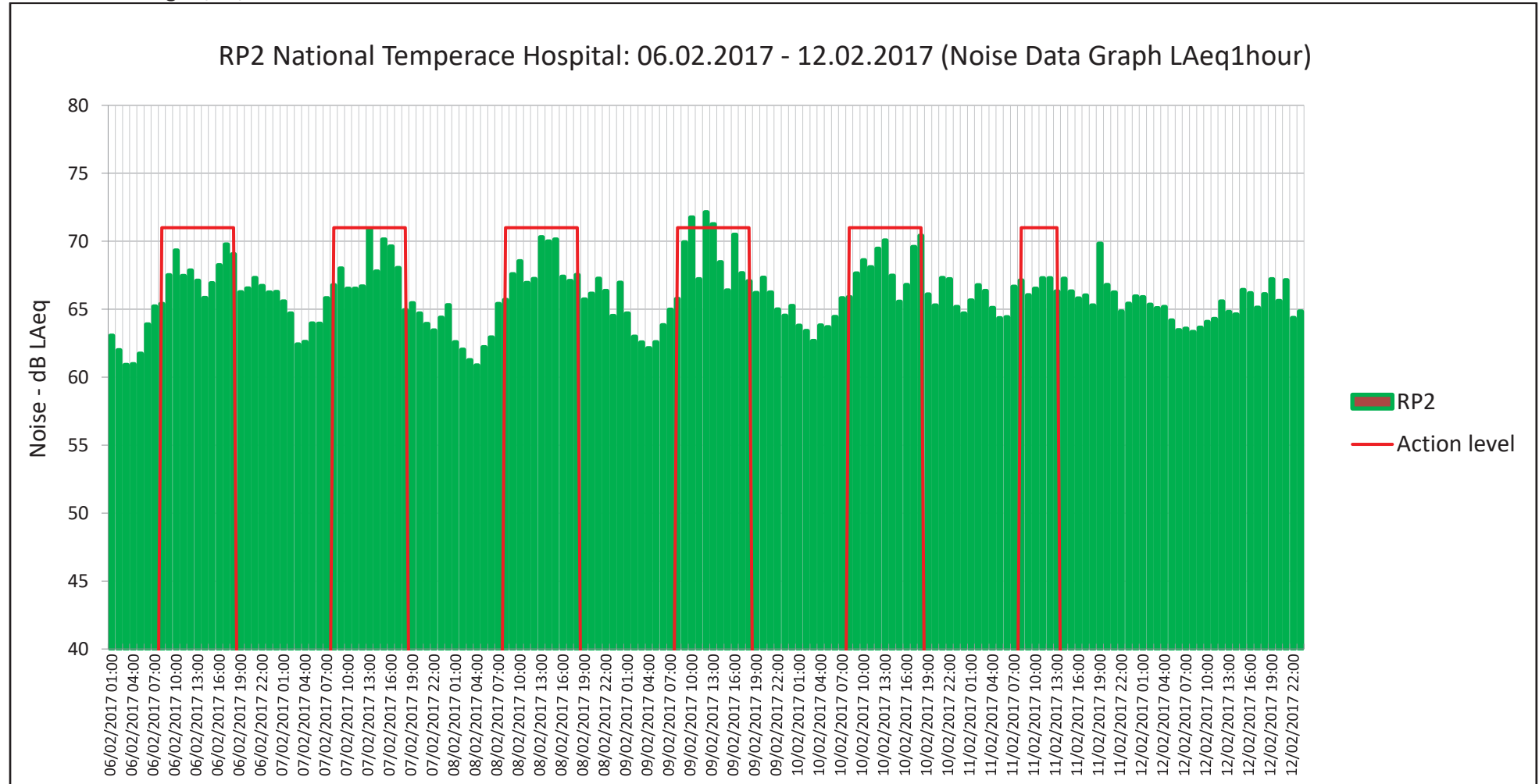
The recorded unattended noise measurements in this period are presented as graphs in section 5.0 of this report using LAeq1hour data points.

5.0 Noise Monitoring Graphs

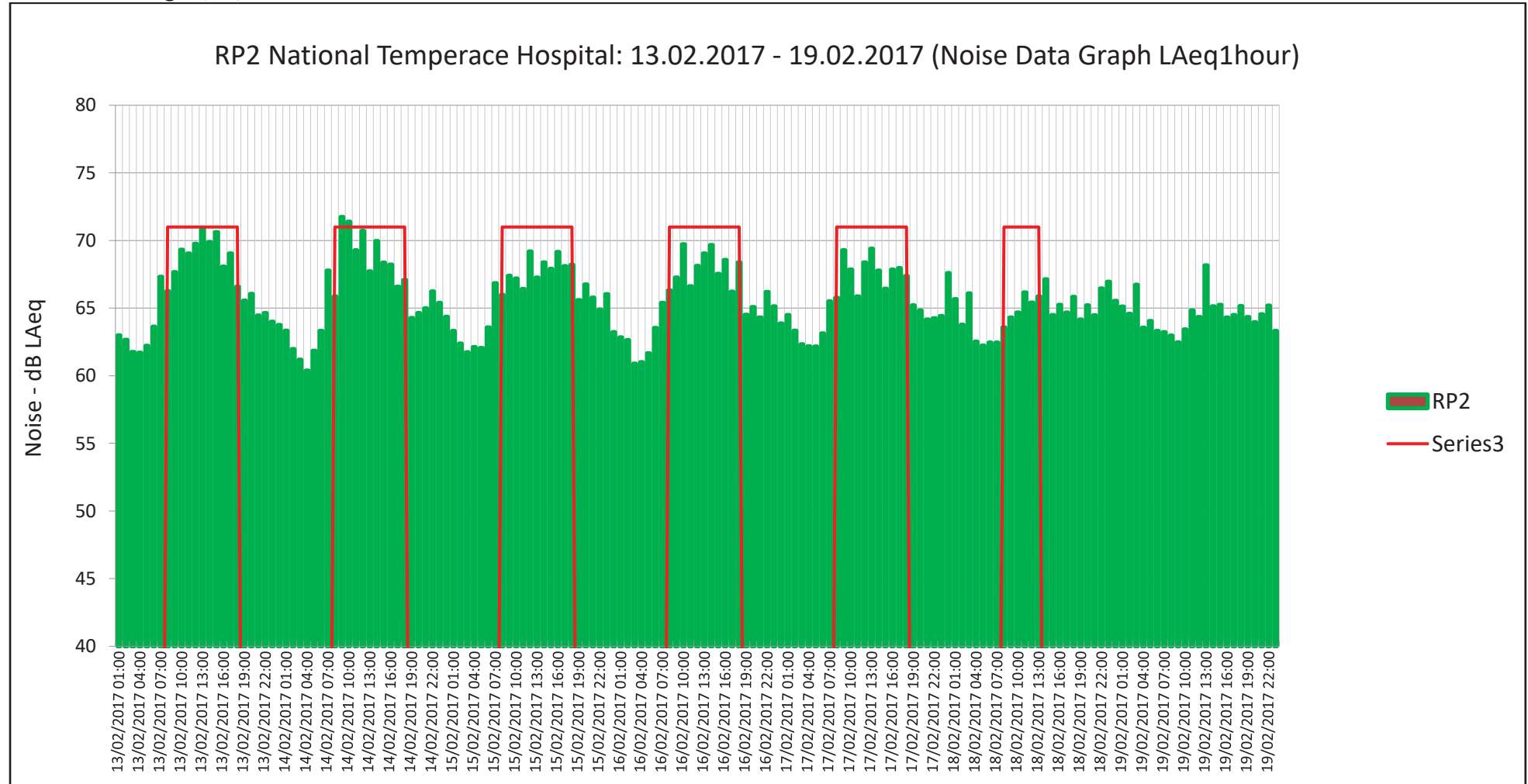
RP2 Week ending 05/02/17



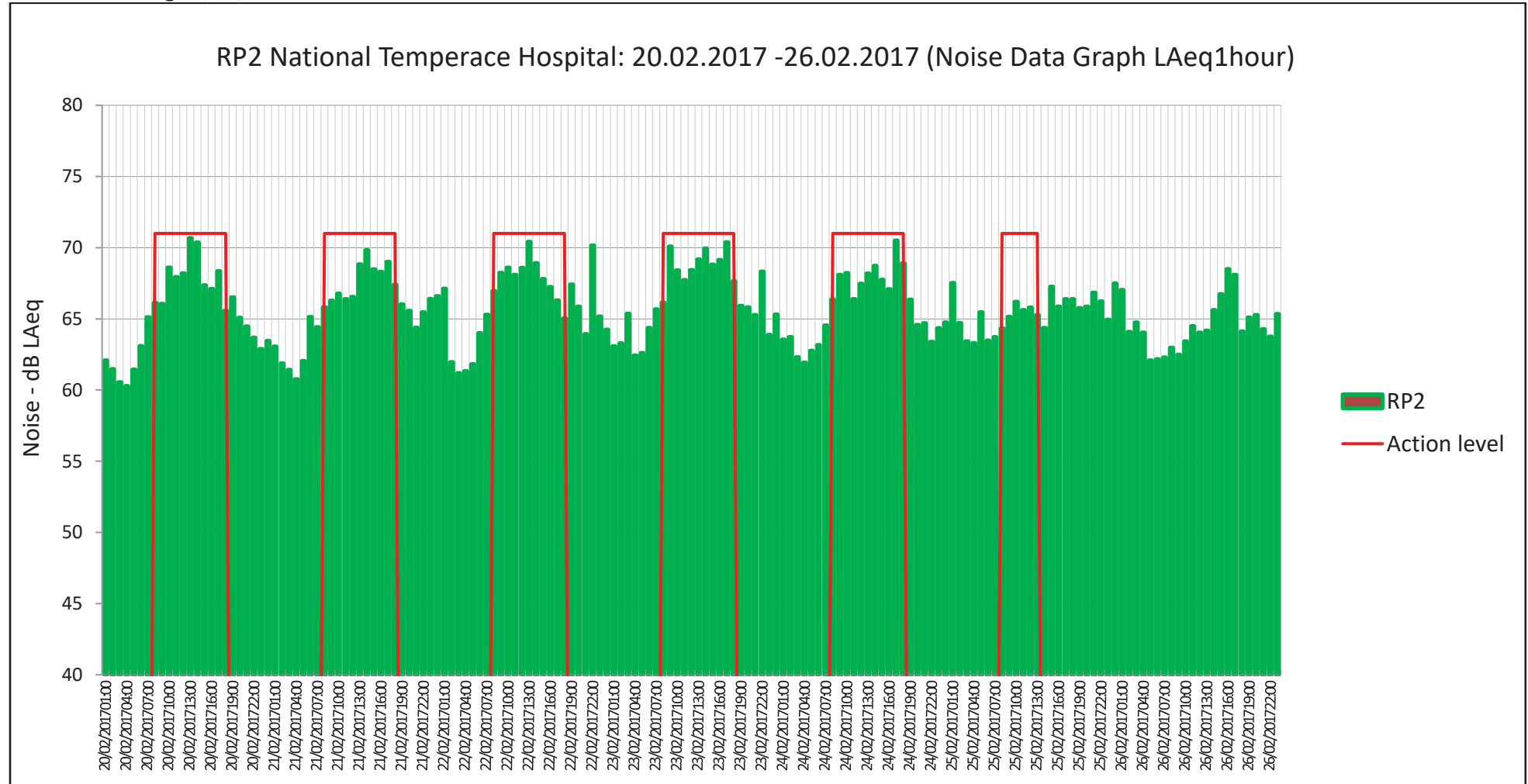
RP2 Week ending 12/02/17



RP2 Week ending 19/02/17



RP2 Week ending 26/02/17



6.0 Discussion

Unattended ambient noise monitoring has been undertaken for the demolition activities at the National Temperance Hospital at position RP2.

The activities in this period from 30 January to 26 February 2017 would include:

- Striking internal scaffold to the courtyard
- Striking external scaffold to Hampstead Road and Cardington Street
- Post-asbestos soft strip to the ground floor
- Demolition of walls and floor slab to the third floor of building North
- Demolition of main building Party Wall (chimney and roof)
- Demolition of main building West second and third floors
- Demolition of main building East third and second floor
- Temporary weathering to party wall
- Cranage twice a week

The unattended and recorded measured noise levels are presented graphically in this report.

The daily LAeq10hour from 08.00 to 18.00 Monday to Friday, the LAeq5hour from 08.00 to 13.00 on Saturday and the LAeq1hour shoulder hours were as Tables 6.1 to 6.4:

dBLAeq10hours						dBLAeq5hours
Date	30/01/2017	31/01/2017	01/02/2017	02/02/2017	03/02/2017	04/02/2017
RP2	66.96	67.05	67.18	67.03	67.48	66.34
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	66.03	65.81	67.83	66.87	66.04	63.60
6 - 7 PM	65.32	66.99	65.66	69.31	66.66	64.73

Table 6.1

dBLAeq10hours						dBLAeq5hours
Date	06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017	11/02/2017
RP2	68.05	68.27	68.47	69.69	68.60	66.72
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	65.39	66.78	65.69	65.76	65.88	67.13
6 - 7 PM	66.25	65.44	65.72	66.20	66.09	67.25

Table 6.2

dBLAeq10hours						dBLAeq5hours
Date	13/02/2017	14/02/2017	15/02/2017	16/02/2017	17/02/2017	18/02/2017
RP2	69.27	69.45	68.00	68.26	67.94	65.34
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	66.25	65.88	65.98	66.30	65.76	63.58
6 - 7 PM	65.56	64.27	65.59	64.52	65.20	67.14

Table 6.3

dBLAeq10hours						dBLAeq5hours
Date	20/02/2017	21/02/2017	22/02/2017	23/02/2017	24/02/2017	25/02/2017
RP2	68.3	67.95	68.14	69.06	68.27	65.62
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	66.12	65.81	66.95	66.14	66.36	64.33
6 - 7 PM	66.52	66.03	67.42	65.92	66.35	64.36

Table 6.4

From tables 6.1 to 6.4 no exceedances of the 71dBLAeq10h action level occurred in this measurement period. In addition, the LAeq1hour measured and recorded in the shoulder hours was below the action level and below the LAeq10hour for that day.

Unattended Noise Monitoring Report

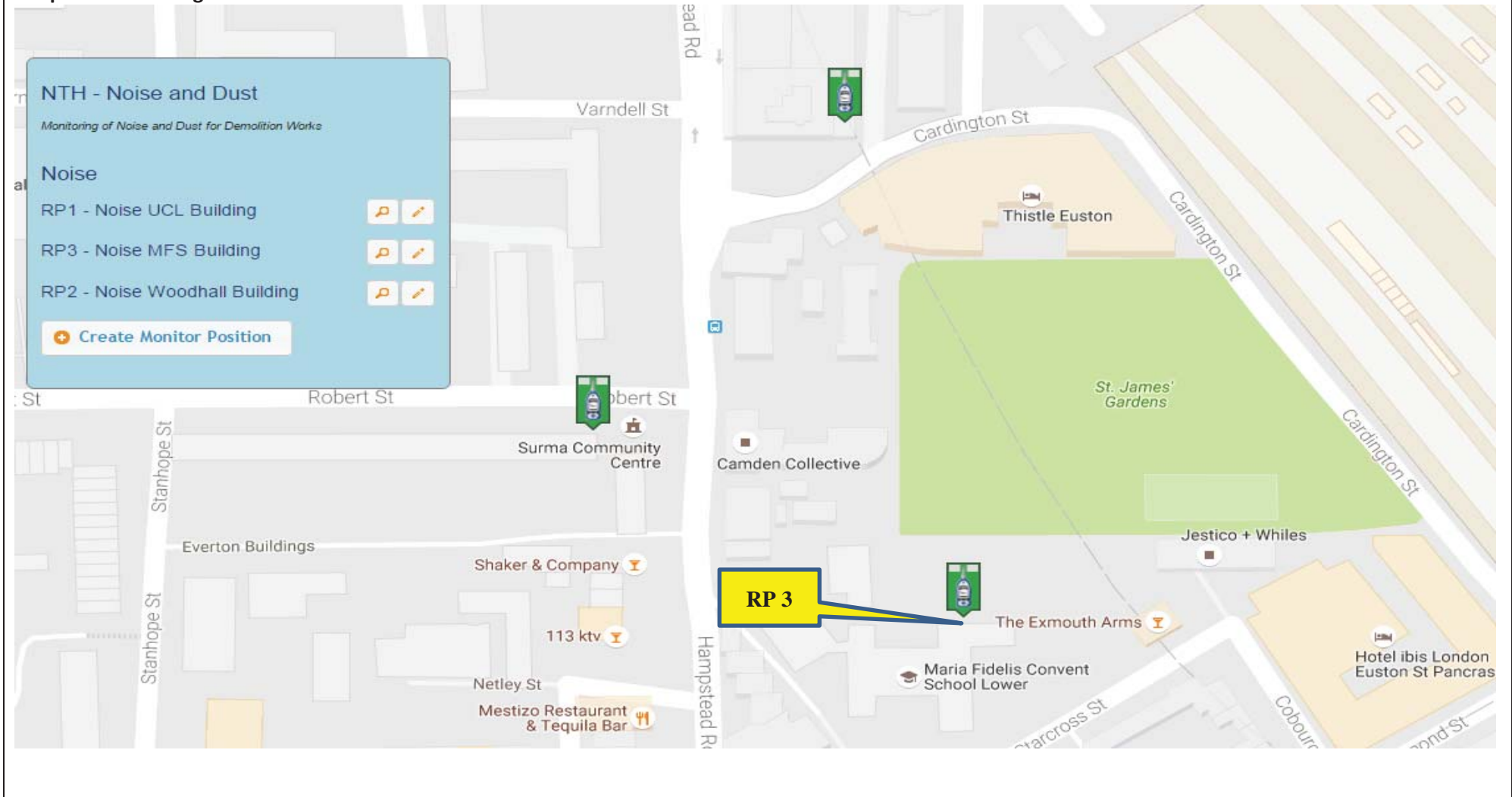
Period: 30 January to 26 February 2017

Project No EEMC/065/2016
Report No. EEMC-NTH-065.015 – NTH, HS2 Rev 00
Client: Keltbray Limited
Title: EEMC/065-015-NTH, HS2 - Unattended Noise Monitoring Report No.15
Period: 30 January - 26 February 2017

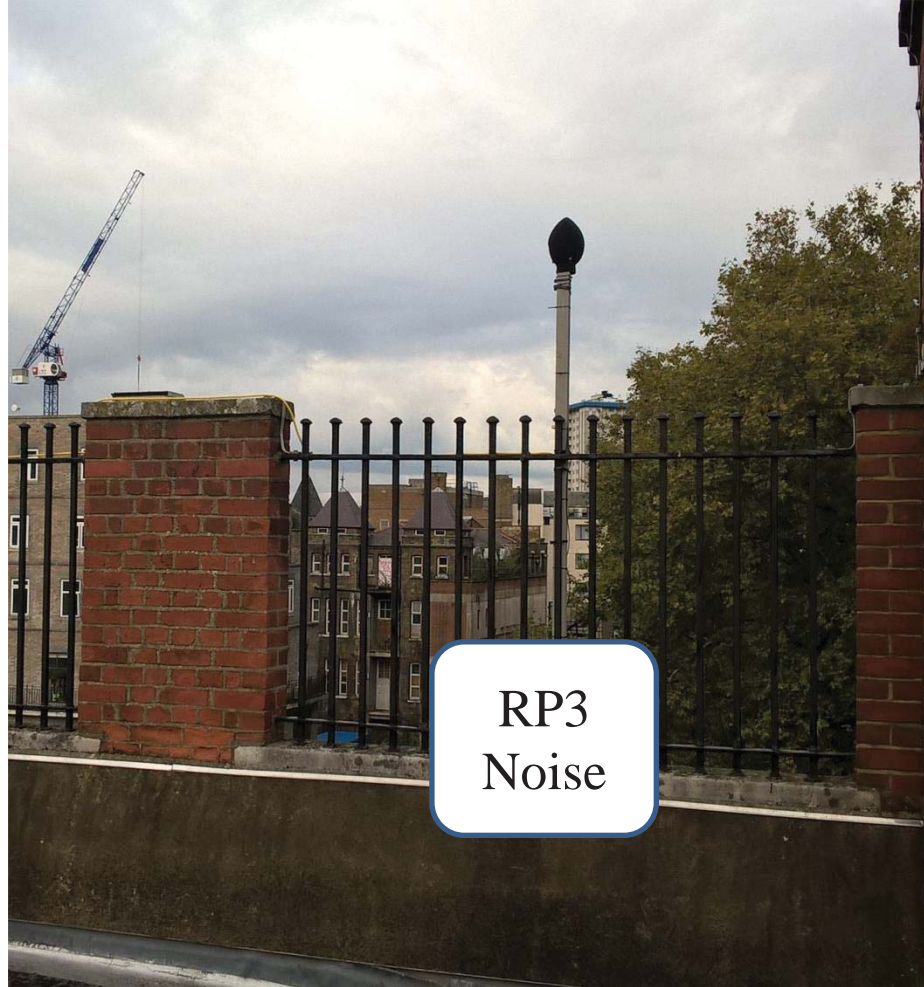
Details of Noise Monitor at Receptor Point (RP3)

ID Reference	RP3
Location	Maria Fidelis School (Terrace of Classroom 22)
Instrument:	Rion NL-52
Serial Number:	00553874
Installation Date:	12/10/2016
Onsite Calibration:	12/10/2016
Laboratory Calibration: See attached certificate (Appendix 1)	03/10/2016 UCRT16/1300

Map of monitoring location



Photos of monitor



1.0 Introduction

European Environmental Monitoring and Consultancy (EEMC) Limited is appointed by Keltbray to undertake environmental monitoring for the demolition works phase at the National Temperance Hospital project located in London Borough of Camden (LBC). Noise monitoring equipment has been installed at three locations and measured noise levels are to be recorded continuously.

This report presents the unattended noise data measured and recorded in the period from 30 January to 26 February 2017. This report should be read in conjunction with the s61 Application submitted to LBC for the National Temperance Hospital demolition works and the Trigger Action Plan (TAP) for position RP3 at the Maria Fidelis School.

Site operations will be limited to 08:00-18:00 hours Monday to Friday and 08:00-13:00 hours on Saturday with no works on Sundays or public holidays.

This report presents the noise levels measured and recorded at position RP3 during demolition associated activities

The principal works in this period were:

- Striking internal scaffold to the courtyard
- Striking external scaffold to Hampstead Road and Cardington Street
- Post-asbestos soft strip to the ground floor
- Demolition of walls and floor slab to the third floor of building North
- Demolition of main building Party Wall (chimney and roof)
- Demolition of main building West second and third floors
- Demolition of main building East third and second floor
- Temporary weathering to party wall
- Cranage twice a week

The site is in the London Borough of Camden (LBC). The surrounding area is populated by residential blocks, various types of businesses such as hotels, a community center and the Maria Fidelis School and UCL, all of which could be affected by demolition and associated activities.

2.0 Instrumentation

All noise monitoring units are Rion NL-52 Class 1 noise monitoring systems housed in a weather proof environmental hard case and an all-weather protected remote microphone (see photo). Calibration certificates for the noise monitoring system is attached as Annex 1. The system was field calibrated on installation on site

3.0 Methodology

Keltbray requested (EEMC) Limited to undertake unattended noise monitoring at three agreed locations near the works, including the unattended noise levels prior to demolition works. For the start of demolition works noise trigger action levels were also agreed with the Environmental Health Officer (EHO) of Camden. The unattended noise monitoring presented in this report was undertaken during demolition activity on site. All results are recorded (LAeqT) by data logging equipment within each unit.

Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action levels at RP3 are 63dB LAeq10hour and 73dB LAeq30min.

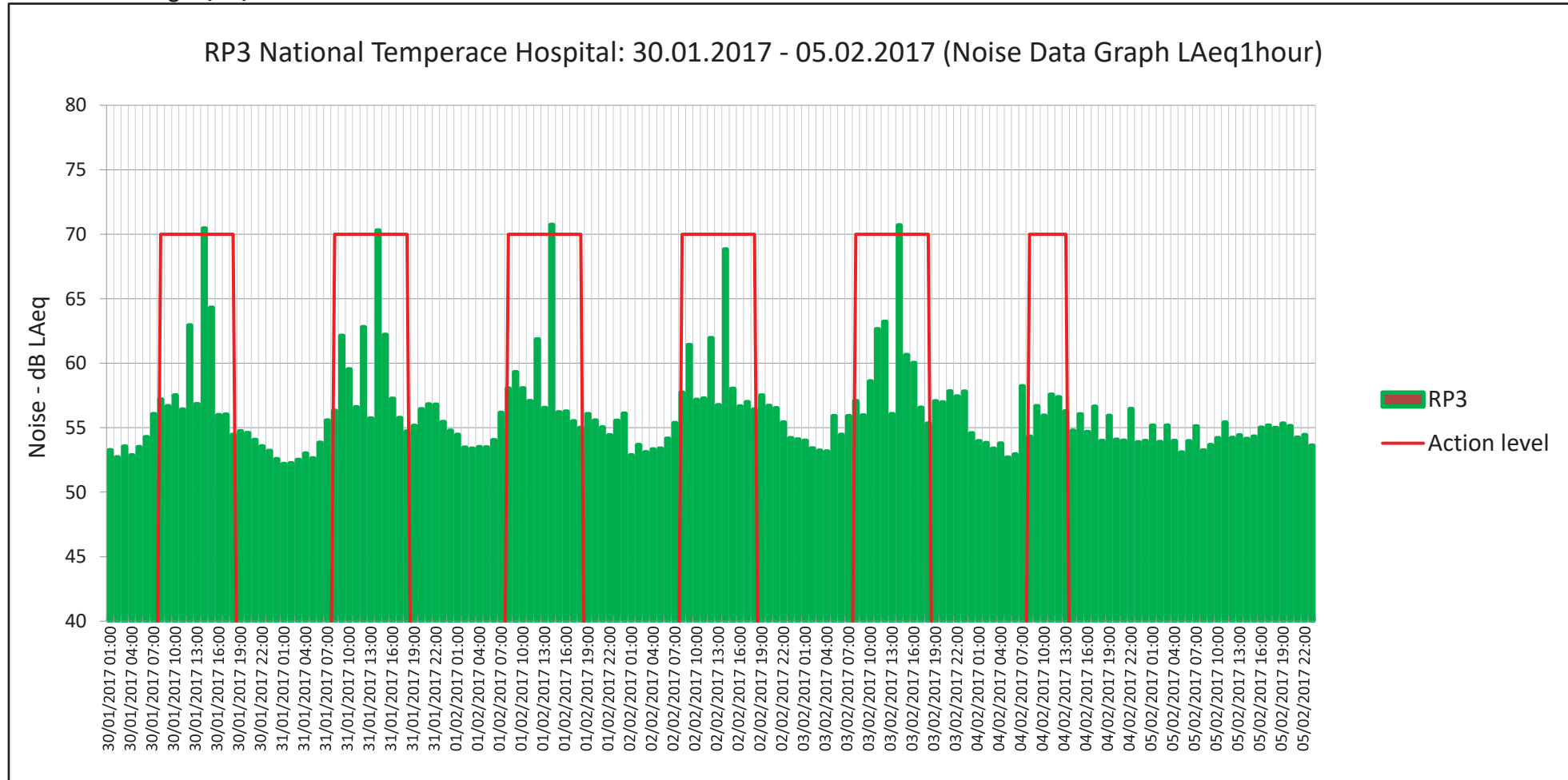
The measured unattended noise levels can be used to compare with the measured and recorded noise levels during the demolition activities.

4.0 Measurement Results

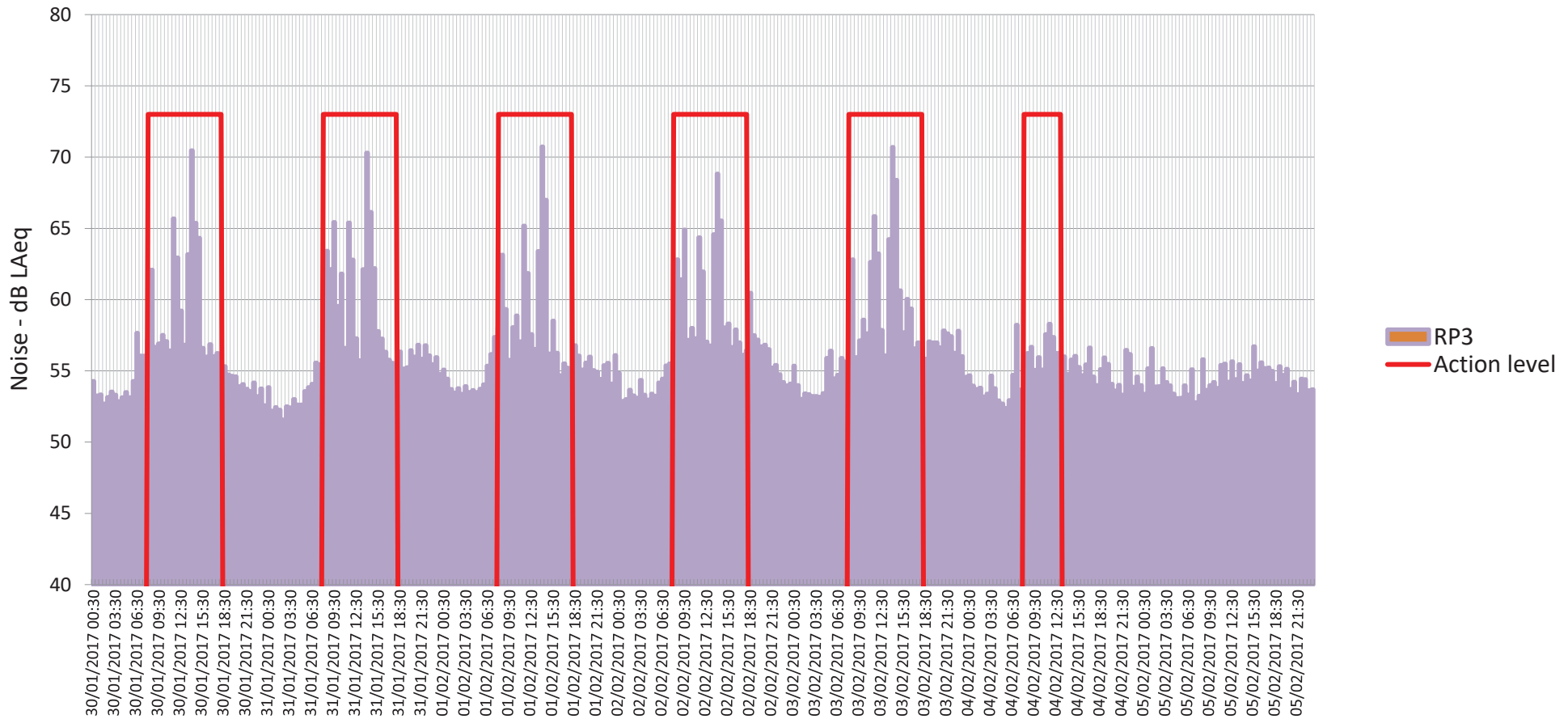
The recorded unattended noise measurements in this period are presented as graphs in section 5.0 of this report using LAeq1h and LAeq30min data points.

5.0 Noise Monitoring Graphs

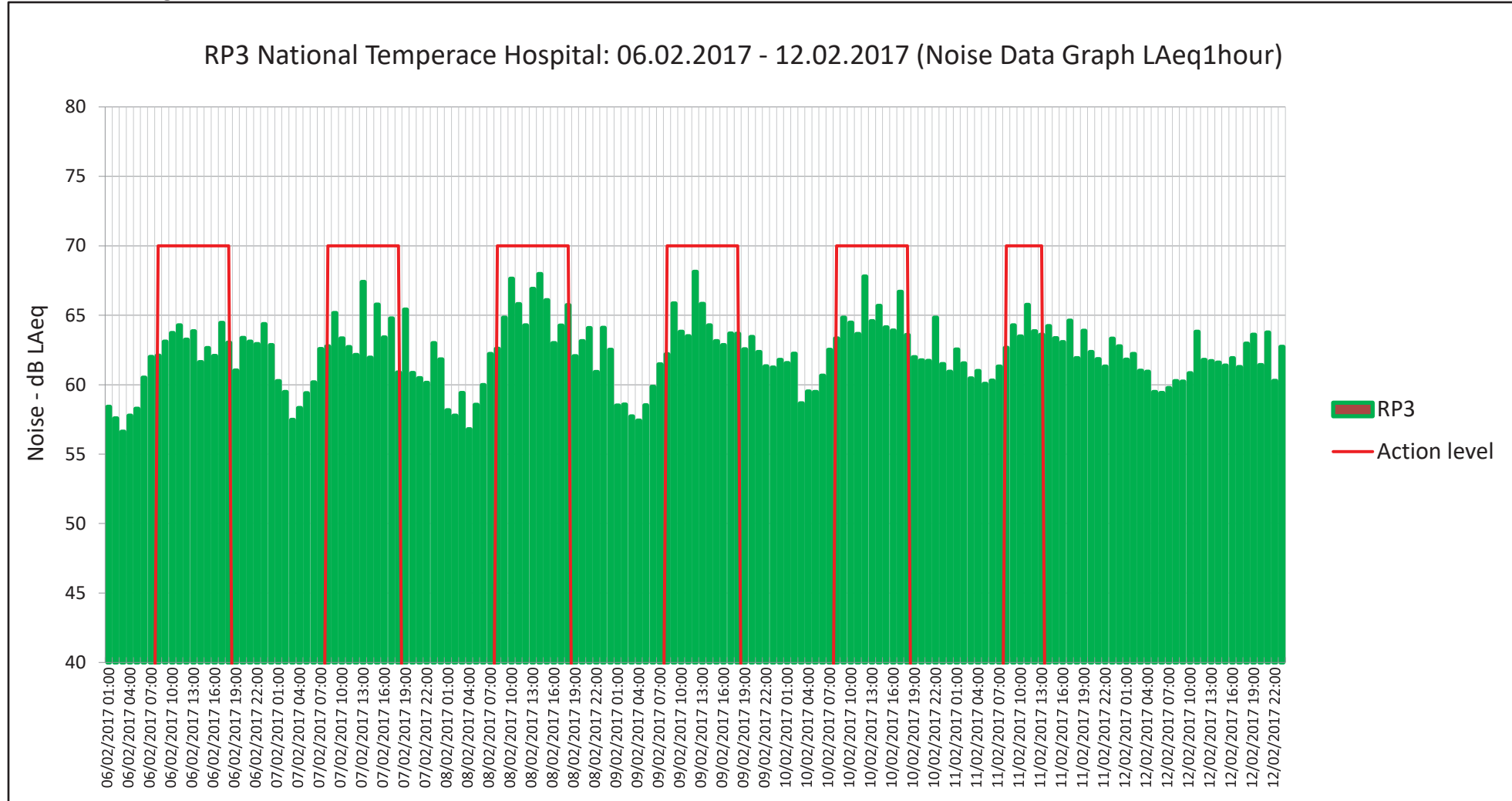
RP3 Week ending 05/02/17



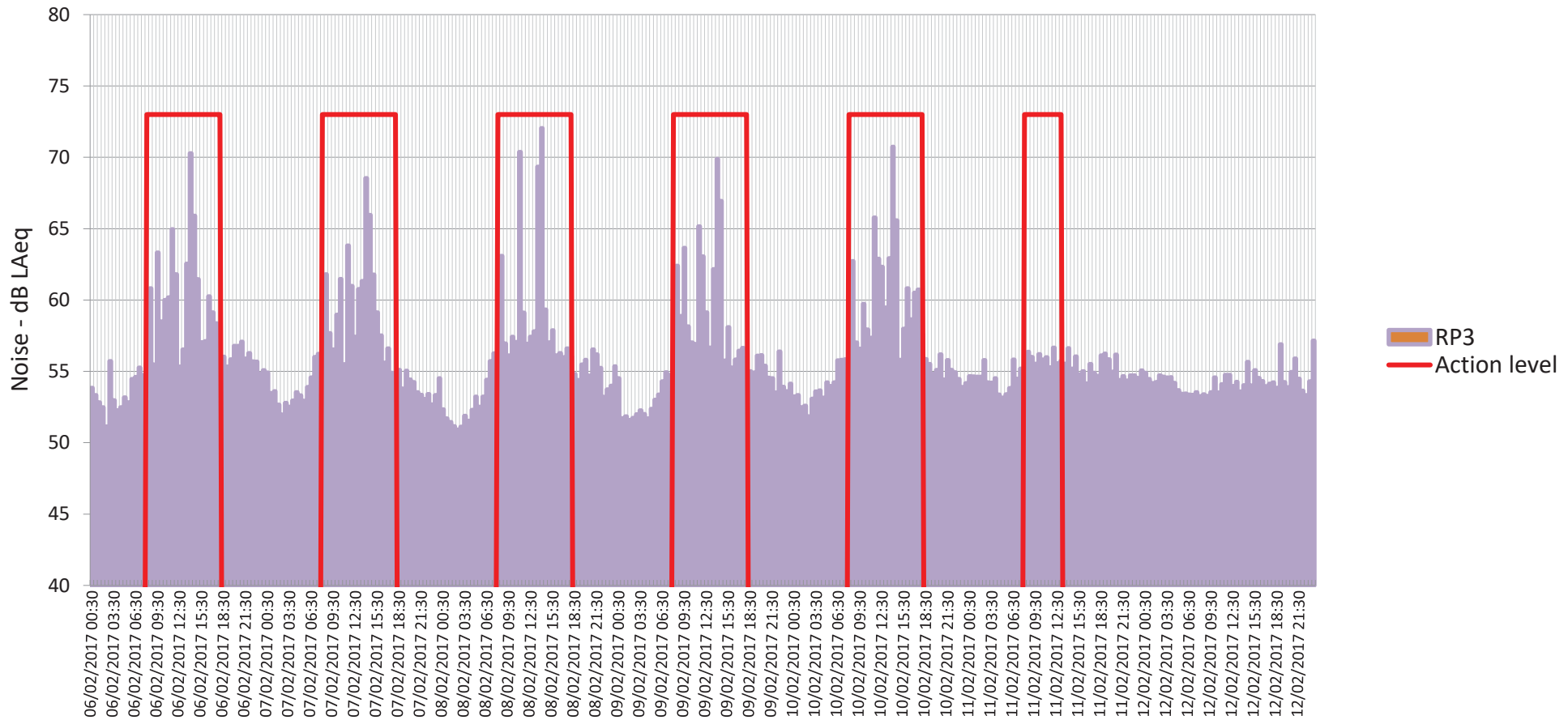
RP3 National Temperance Hospital: 30.01.2017 - 05.02.2017 (Noise data graph LAeq30minutes)



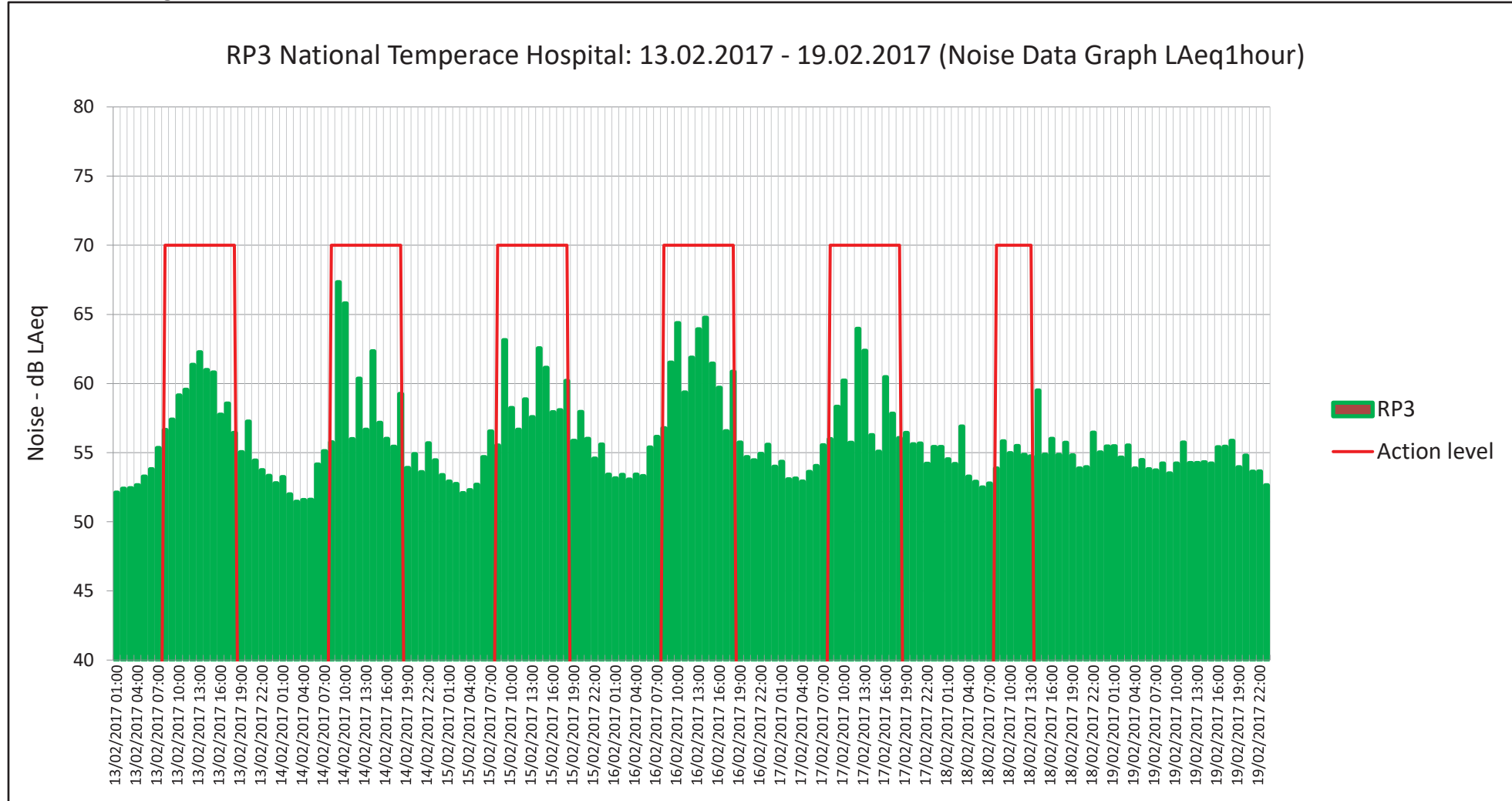
RP3 Week ending 12/02/17



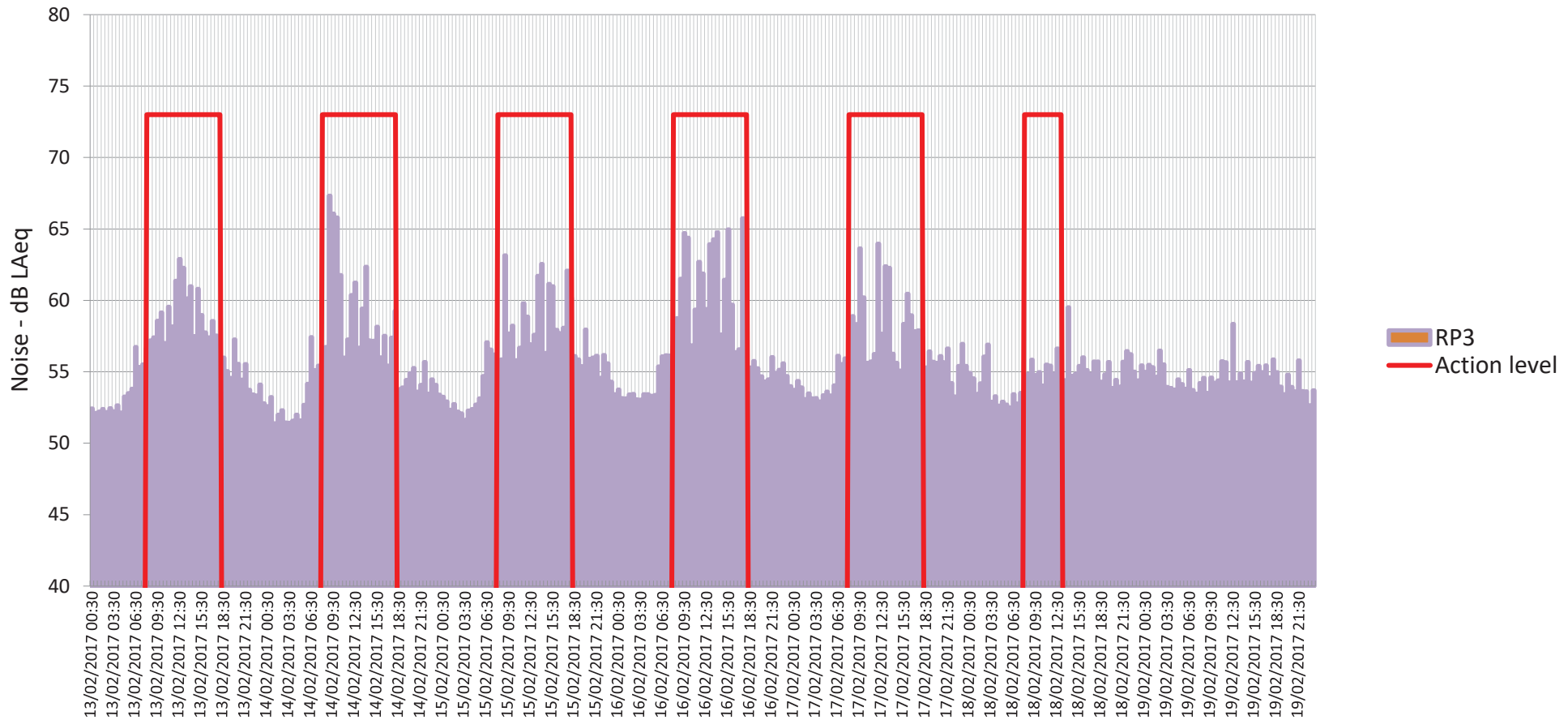
RP3 National Temperance Hospital: 06.02.2017 - 12.02.2017 (Noise data graph LAeq30minutes)



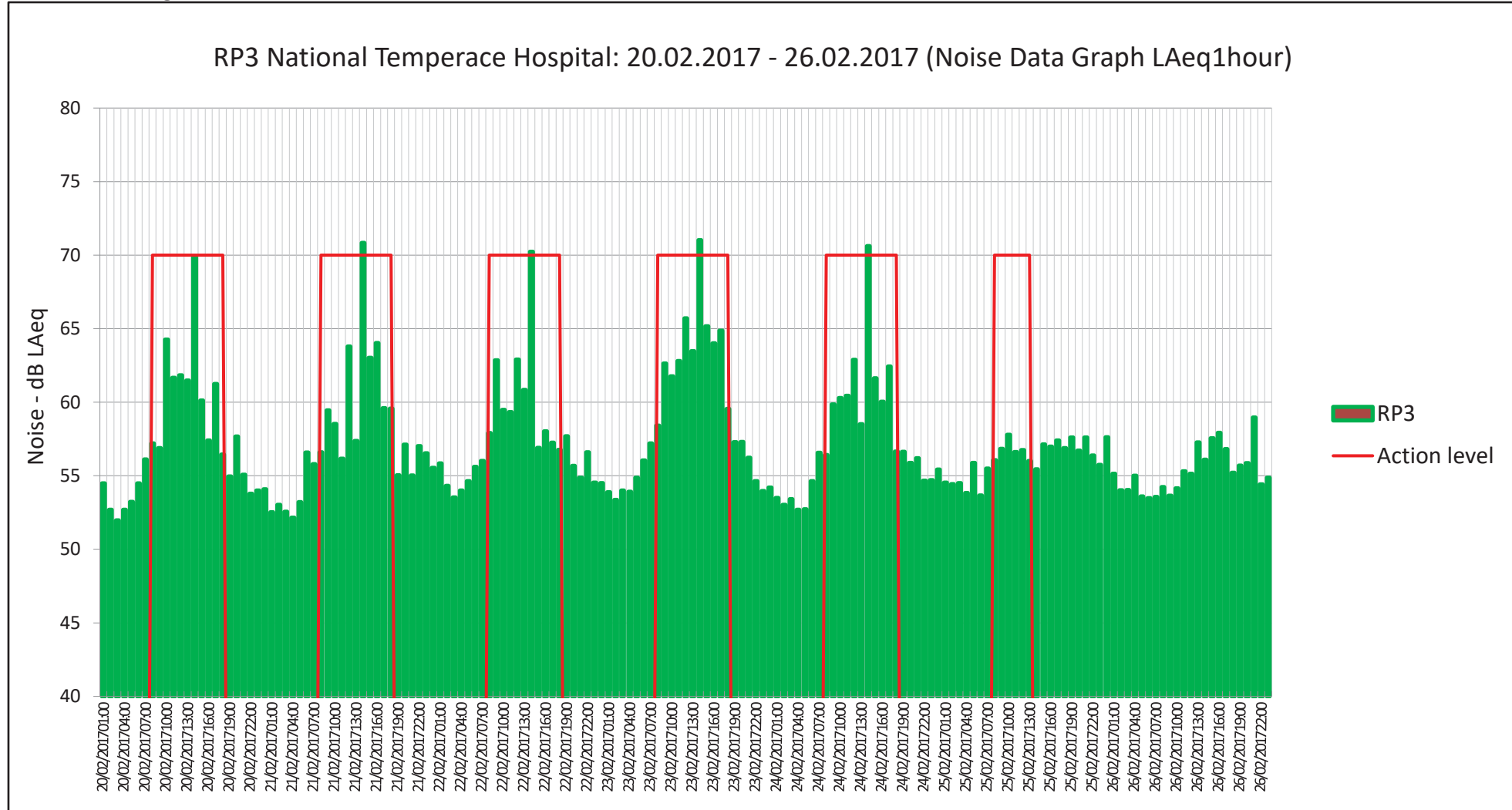
RP3 Week ending 19/02/17



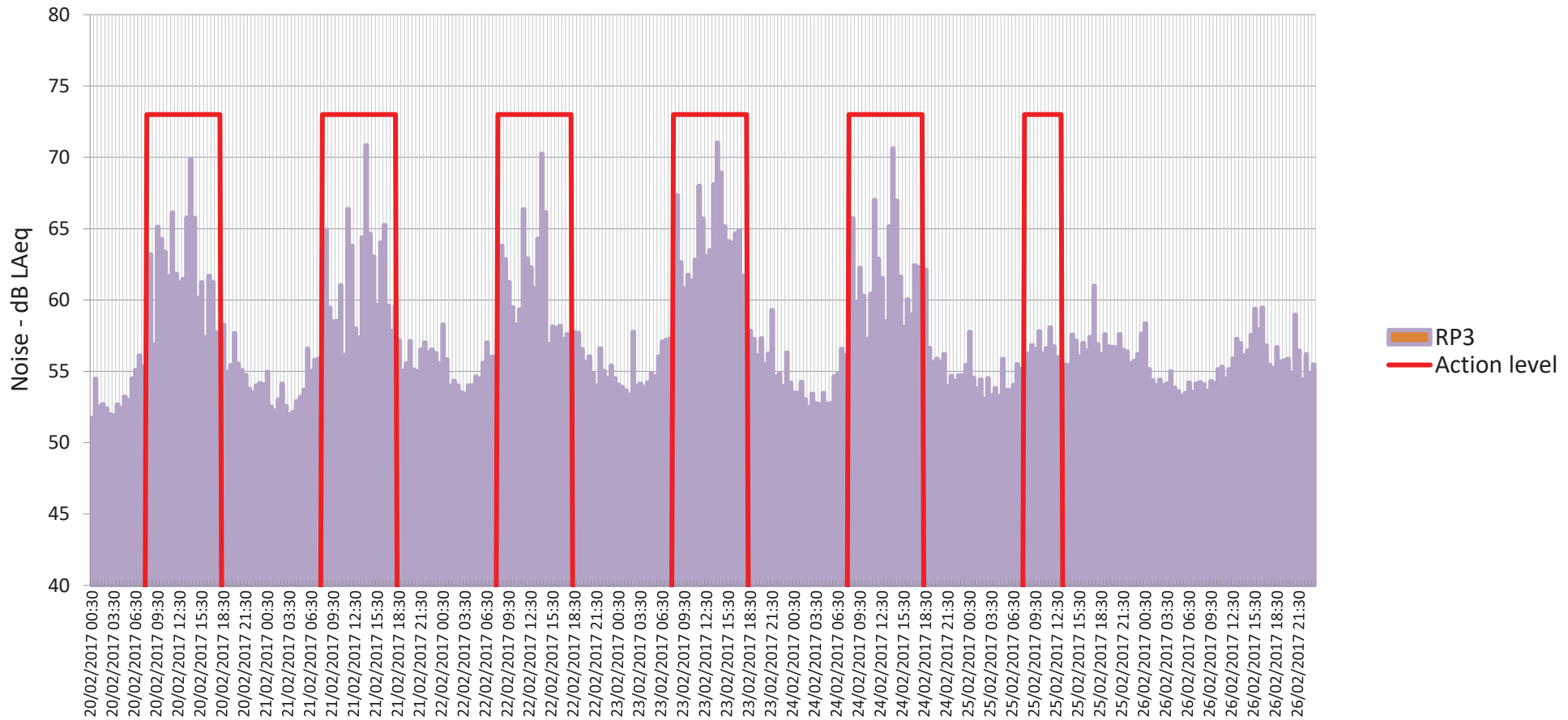
RP3 National Temperance Hospital: 13.02.2017 - 19.02.2017 (Noise data graph LAeq30minutes)



RP3 Week ending 26/02/17



RP3 National Temperance Hospital: 20.02.2017 - 26.02.2017 (Noise data graph LAeq30minutes)



6.0 Discussion

Unattended ambient noise monitoring has been undertaken during demolition activities at the National Temperance Hospital site at location RP3.

The activities in this period from 30 January to 26 February 2017 include:

- Striking internal scaffold to the courtyard
- Striking external scaffold to Hampstead Road and Cardington Street
- Post-asbestos soft strip to the ground floor
- Demolition of walls and floor slab to the third floor of building North
- Demolition of main building Party Wall (chimney and roof)
- Demolition of main building West second and third floors
- Demolition of main building East third and second floor
- Temporary weathering to party wall
- Cranage twice a week

The unattended measured and recorded noise levels are presented graphically in this report.

From the graphs there were no exceedances of the 73dBLAeq30min action level in this period.

The daily LAeq10hour from 08.00 to 18.00 Monday to Friday, and 08.00 to 13.00 on Saturday were as Tables 6.1 to 6.4:

dBLAeq10hours						dBLAeq5hours
Date	30/01/2017	31/01/2017	01/02/2017	02/02/2017	03/02/2017	04/02/2017
RP3	62.75	62.75	62.39	61.51	63.04	56.81
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	57.18	56.32	58.04	57.73	57.07	54.3
6 - 7 PM	54.73	55.14	56.06	57.50	57.06	54.77

Table 6.1

dBLAeq10hours						dBLAeq5hours
Date	06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017	11/02/2017
RP3	63.29	64.18	65.90	64.79	65.15	55.94
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	62.09	62.76	62.58	62.20	63.33	62.66
6 - 7 PM	61.03	65.41	62.06	62.55	61.99	64.22

Table 6.2

dBLAeq10hours						dBLAeq5hours
Date	13/02/2017	14/02/2017	15/02/2017	16/02/2017	17/02/2017	18/02/2017
RP3	59.79	61.75	59.97	62.04	59.63	55.19
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	56.64	55.76	55.52	56.77	55.98	53.86
6 - 7 PM	55.04	53.90	55.86	55.74	56.42	59.50

Table 6.3

dBLAeq10hours						dBLAeq5hours
Date	20/02/2017	21/02/2017	22/02/2017	23/02/2017	24/02/2017	25/02/2017
RP3	63.14	63.70	62.91	65.26	63.43	56.84
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	57.20	56.60	57.90	58.41	56.41	56.06
6 - 7 PM	54.95	55.04	57.69	57.28	56.63	55.44

Table 6.4

There were several exceedances of the 63dBLAeq10hour action level highlighted in tables 6.1 to 6.4.

The school children partake of outdoor activity from approximately 10.30 to 11.00 and again during lunch from approximately 13.00 to 14.00. The noise produced from this outdoor activity and clearly identified on audio recording in Livenviro raises the general ambient LAeq c10dB or more over this one-and-a-half-hour period. Removal of this playground activity noise reduces the LAeq10hr by c3-4dB.

The measurements recorded for the shoulder hours LAeq1hour were below the LAeq30min action level.

High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

www.gov.uk/hs2