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High Speed Rail  
(London-West Midlands)  
Noise! «<sup>a</sup> ¥«® £&j ¬«®  
National Temperance Hospital  
April 2017

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## Department for Transport

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## Unattended Noise Monitoring Report

### Period: 27 March to 30 April 2017

Project No EEMC/065/2016

Report No. EEMC-NTH-065.019 – NTH, HS2 Rev 00

Client: Keltbray Limited

Title: EEMC/065-019-NTH, HS2 - Unattended Noise Monitoring Report No.19

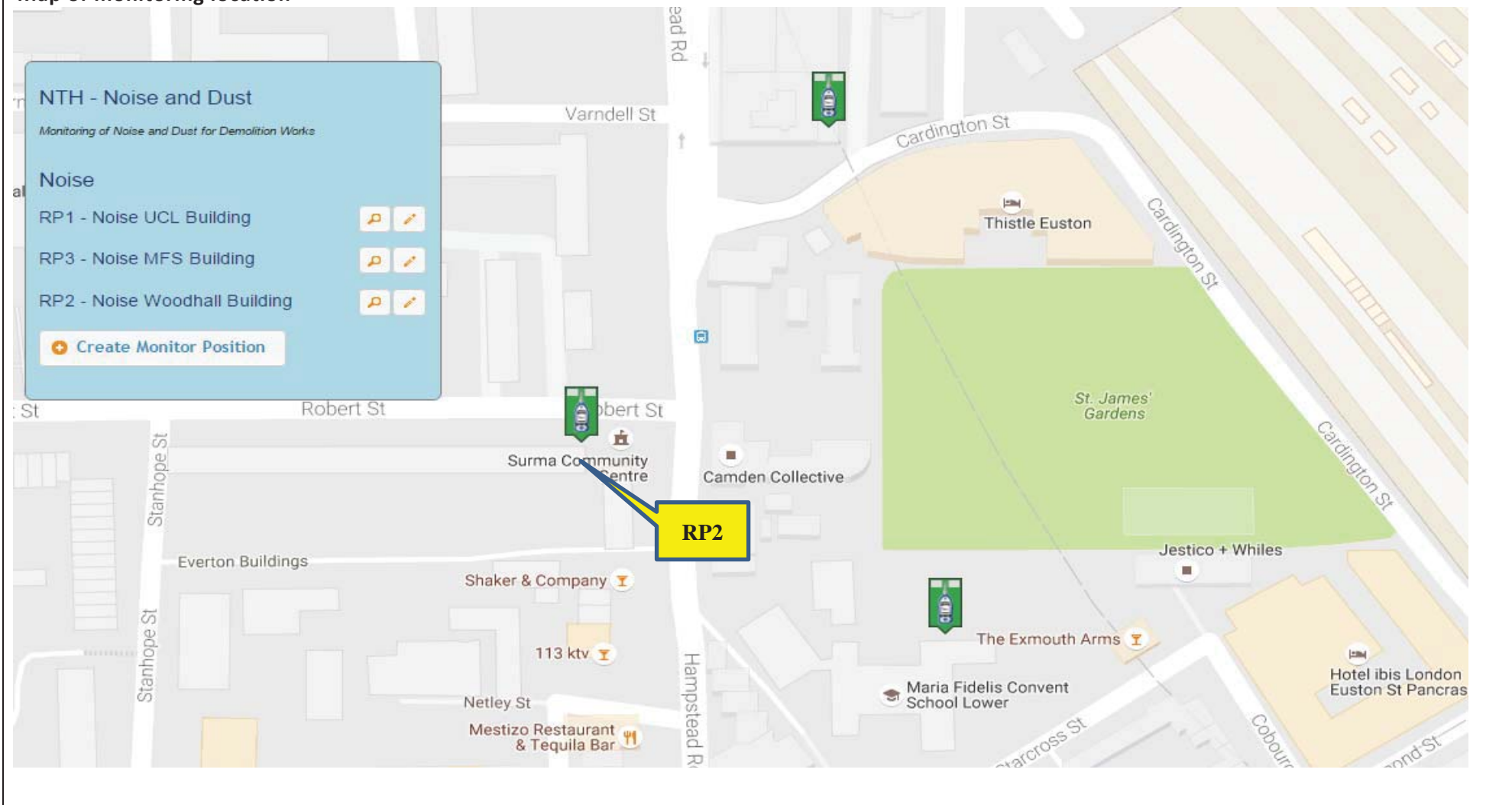
Period: 27 March - 30 April 2017

#### Details of Noise Monitor at Receptor Point (RP2)

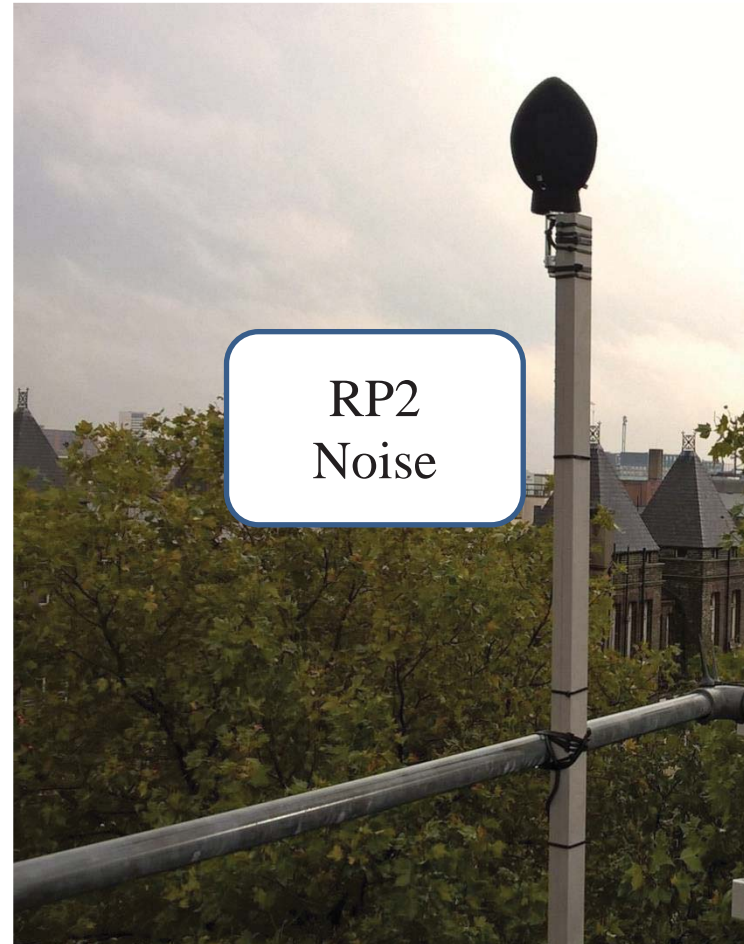
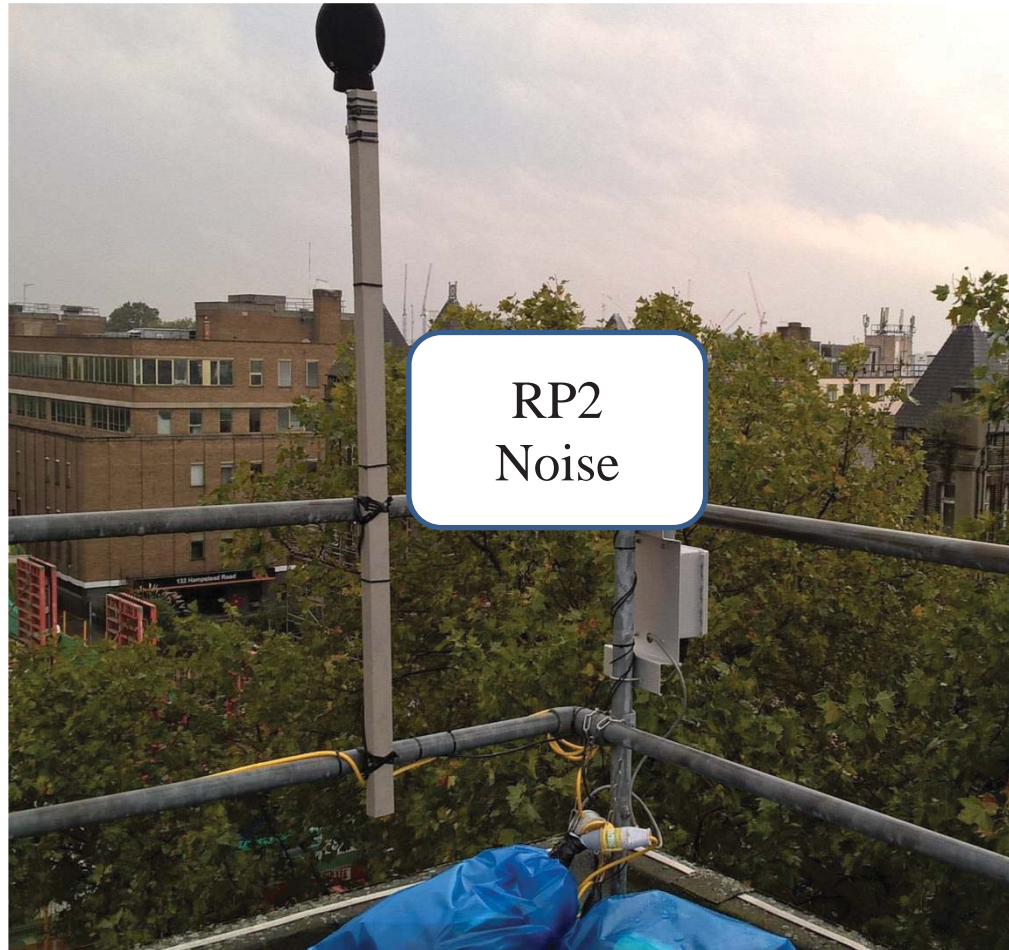
ID Reference	RP2
Location	Terrace of Woodhall residential block (Hampstead Road/Robert Street intersection)
Instrument:	Rion NL-52
Serial Number:	00654028
Installation Date:	13/10/2016
Onsite Calibration:	13/10/2016
Laboratory Calibration: See attached certificate (Appendix 1)	03/10/2016 UCRT16/1296

**NOTE:** RP1 was removed from 132 Hampstead Road at the request of University College London with agreement from London Borough of Camden

**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 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 27 March to 30 April 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:

- Internal and external scaffold, dismantled daily as the demolition progresses
- Post-Asbestos soft strip to the Cardington Street vaults
- Demolition of main building north, including ground floor slab and walls
- Demolition of main building party wall, including breaking out ground floor slab
- Demolition of main building west on 1st floor slab and wall at ground level with large machine
- Demolition of main building, east; backfilling and demolishing of RC frame
- Temporary weathering to party wall, ground floor to 1st
- Cutline to link bridge

The site is in the London Borough of Camden (LBC). The surrounding area is populated by residential blocks, several 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).

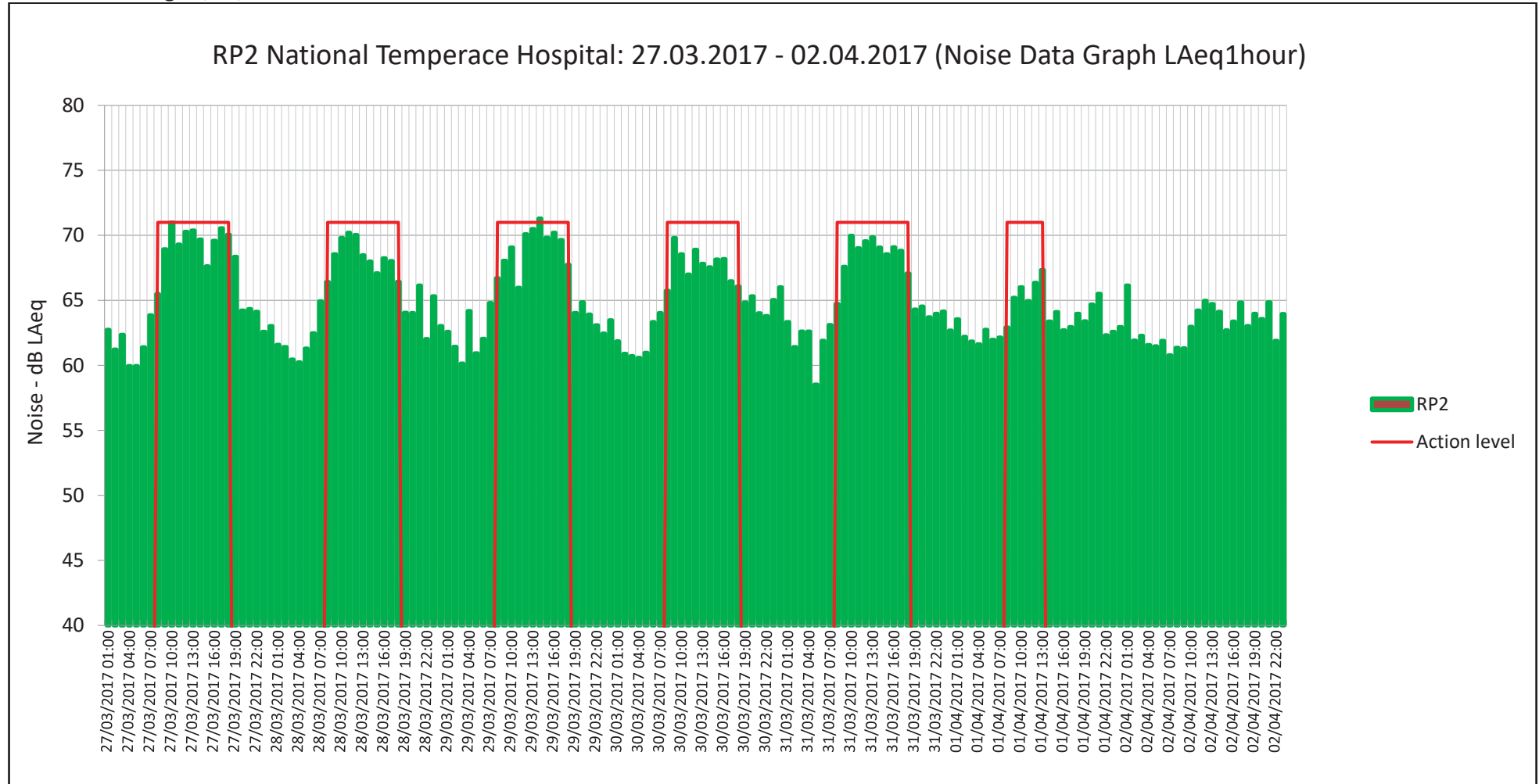
Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action level at RP2 is 71dB LAeq10hour.

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**

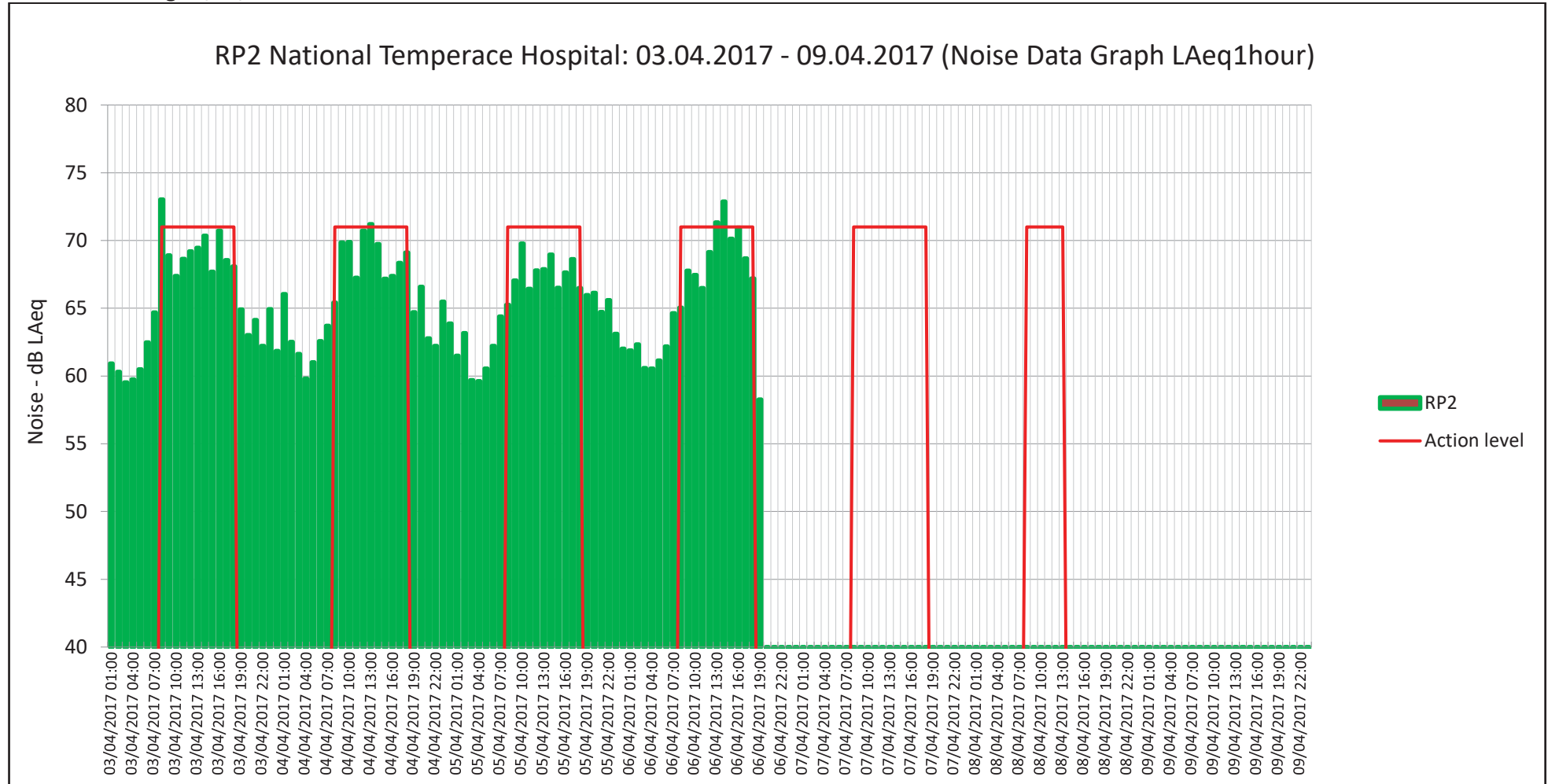
The recorded unattended noise measurements in this period are presented as graphs in section 5.0 of this report using LAeq1hour data points.

5.0 Noise Monitoring Graphs  
 RP2 Week ending 02/04/17

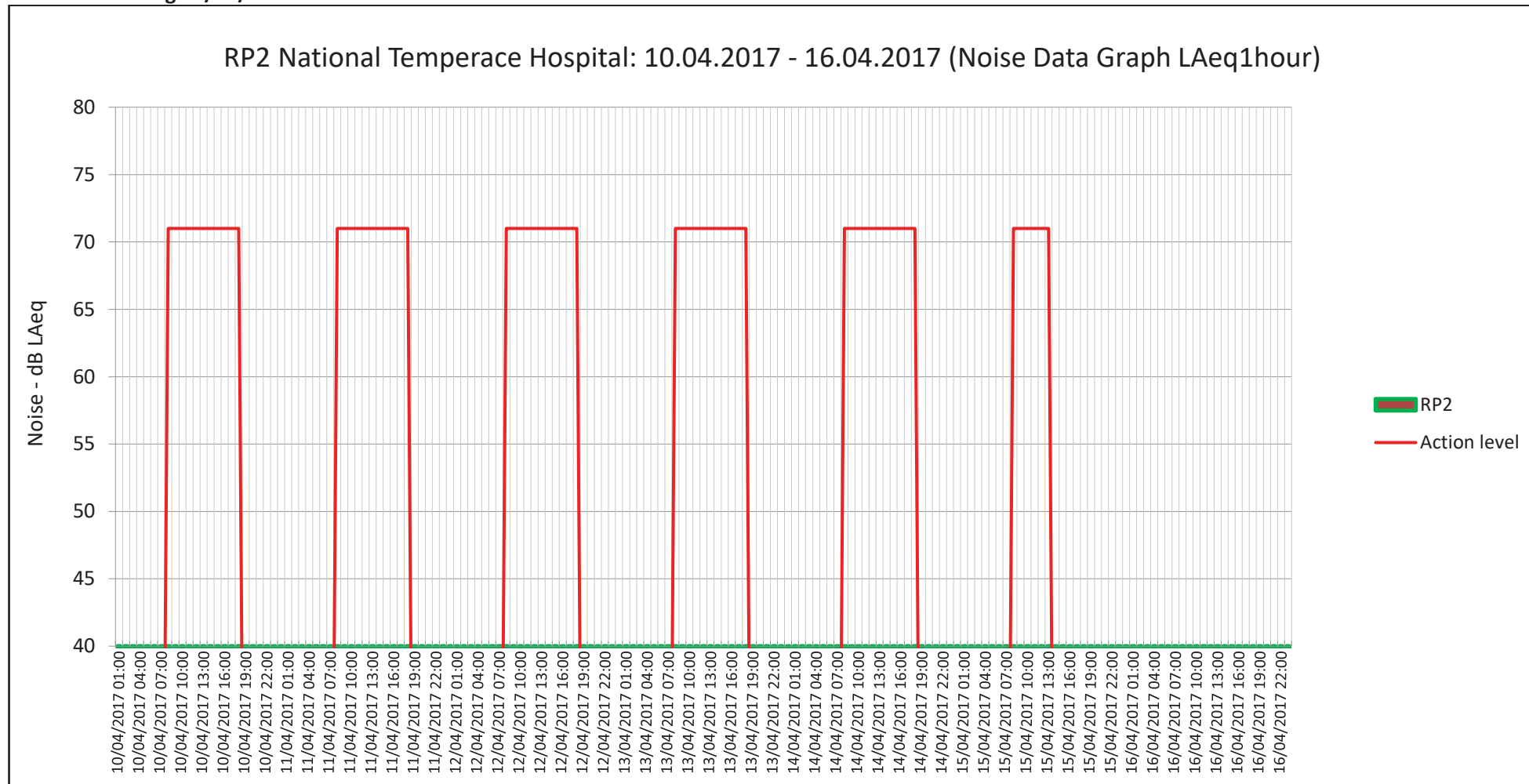




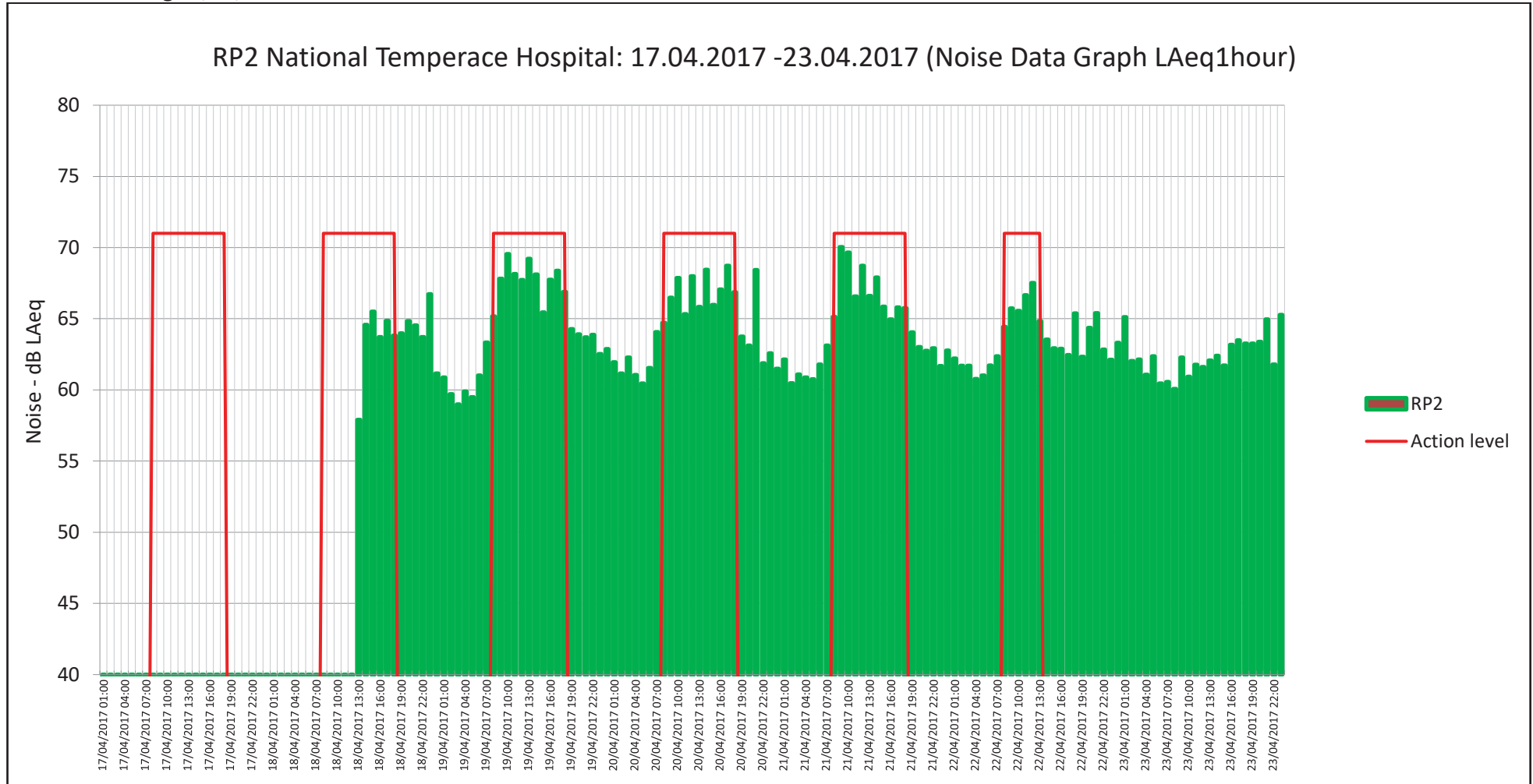
RP2 Week ending 09/04/17



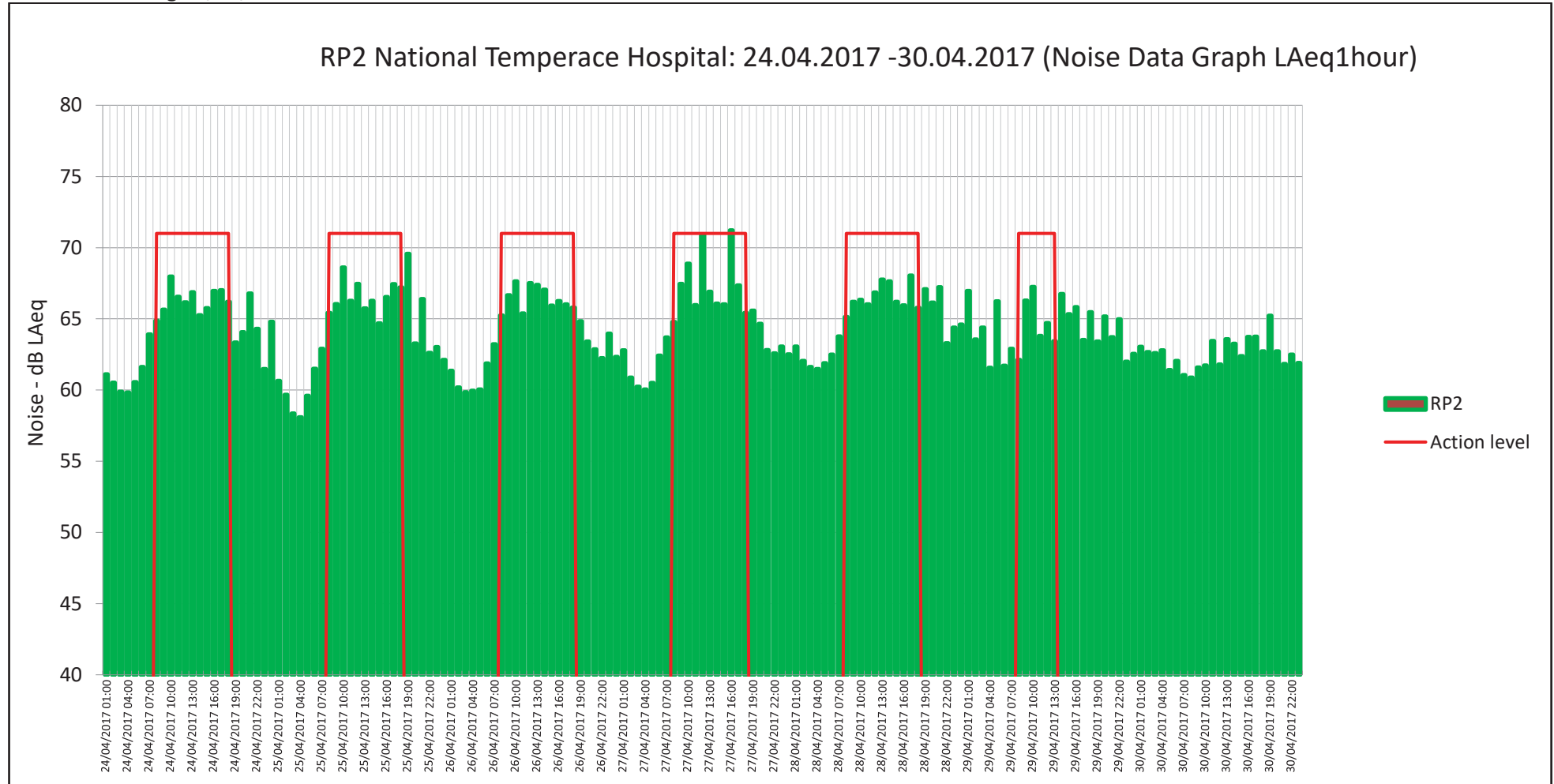
RP2 Week ending 16/04/17



**RP2 Week ending 23/04/17**



**RP2 Week ending 30/04/17**



## 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 27 March to 30 April 2017 are included on section 1 of this report.

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 6.5:

dBLAeq10hours						dBLAeq5hours
Date	27/03/2017	28/03/2017	29/03/2017	30/03/2017	31/03/2017	01/04/2017
RP2	69.82	68.63	69.46	67.97	68.94	66.05
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	65.48	66.42	66.70	65.74	64.72	62.91
6 - 7 PM	68.35	64.03	64.02	64.84	64.29	63.38

**Table 6.1**

dBLAeq10hours						dBLAeq5hours
Date	03/04/2017	04/04/2017	05/04/2017	06/04/2017	07/04/2017	08/04/2017
RP2	69.03	69.29	67.85	69.67	0.00	0.00
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	73.02	65.42	65.26	65.05	0.00	0.00
6 - 7 PM	64.91	64.71	65.98	58.27	0.00	0.00

**Table 6.2**

dBLAeq10hours						dBLAeq5hours
Date	10/04/2017	11/04/2017	12/04/2017	13/04/2017	14/04/2017	15/04/2017
RP2	0.00	0.00	0.00	0.00	0.00	0.00
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	0.00	0.00	0.00	0.00	0.00	0.00
6 - 7 PM	0.00	0.00	0.00	0.00	0.00	0.00

**Table 6.3**

dBLAeq10hours						dBLAeq5hours
Date	17/04/2017	18/04/2017	19/04/2017	20/04/2017	21/04/2017	22/04/2017
RP2	0.00	61.71	68.03	67.20	67.52	66.16
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	0.00	0.00	65.16	64.71	65.14	64.42
6 - 7 PM	0.00	63.98	64.27	63.75	64.04	63.54

Table 6.4

dBLAeq10hours						dBLAeq5hours
Date	24/04/2017	25/04/2017	26/04/2017	27/04/2017	28/04/2017	29/04/2017
RP2	66.50	66.74	66.63	68.11	66.75	65.34
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	64.86	65.42	65.23	64.77	65.13	62.12
6 - 7 PM	63.33	69.56	64.83	65.58	67.08	66.74

Table 6.5

Due to a system outage, no data was recorded between 6 April at 8pm and 18 April at 12pm.

There were no exceedances of the 71dBLAeq10h action level during this measurement period. The shoulder hour from 7am-8am on 3 April, noise level was 73.0dB, as shown on table 6.2, that was not related to site works.

# Unattended Noise Monitoring Report

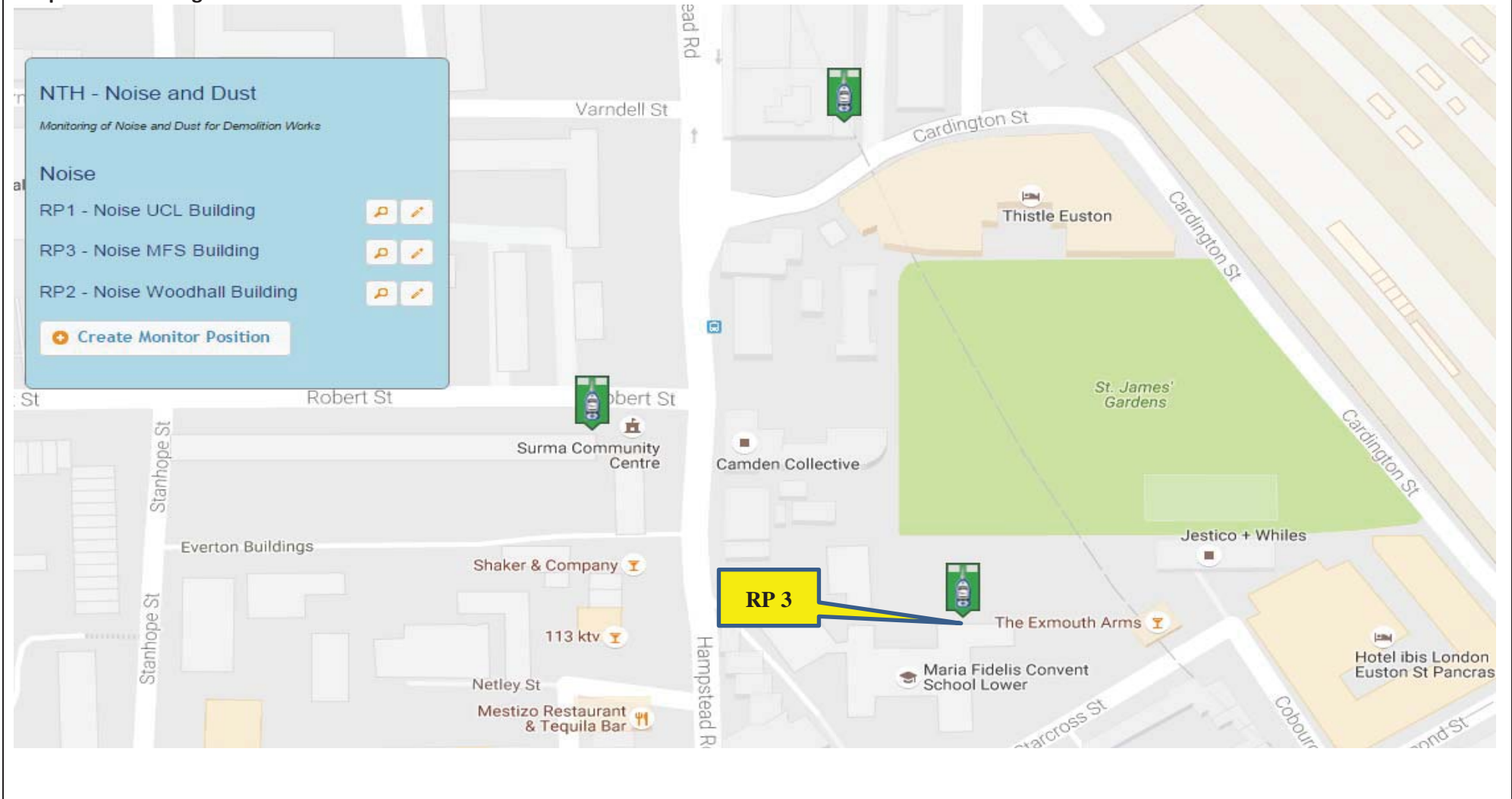
## Period: 27 March to 30 April 2017

Project No. EEMC/065/2016  
Report No. EEMC-NTH-065.020 – NTH, HS2 Rev 00  
Client: Keltbray Limited  
Title: EEMC/065-020-NTH, HS2 - Unattended Noise Monitoring Report No.20  
Period: 27 March - 30 April 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 27 March to 30 April 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.

- Internal and external scaffold, dismantled daily as the demolition progresses
- Post-Asbestos soft strip to the Cardington Street vaults
- Demolition of main building north, including ground floor slab and walls
- Demolition of main building party wall, including breaking out ground floor slab
- Demolition of main building west on 1st floor slab and wall at ground level with large machine
- Demolition of main building, east; backfilling and demolishing of RC frame
- Temporary weathering to party wall, ground floor to 1st
- Cutline to link bridge

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 early demolition activity on site. All results are recorded (LAeqT) by data logging equipment within each unit.

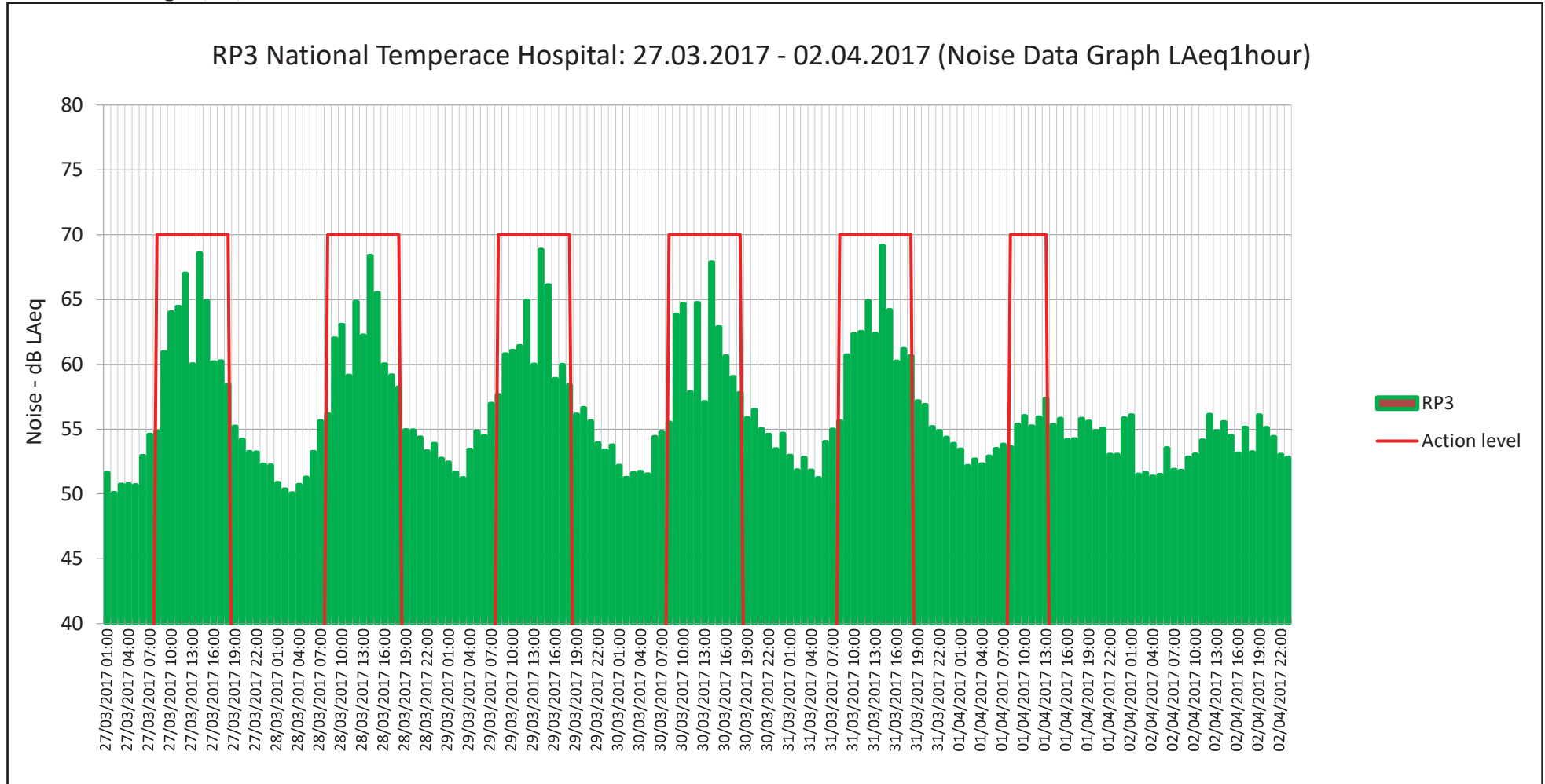
Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action levels at RP3 are 63dBLAeq10hour and 73dBLAeq30min.

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

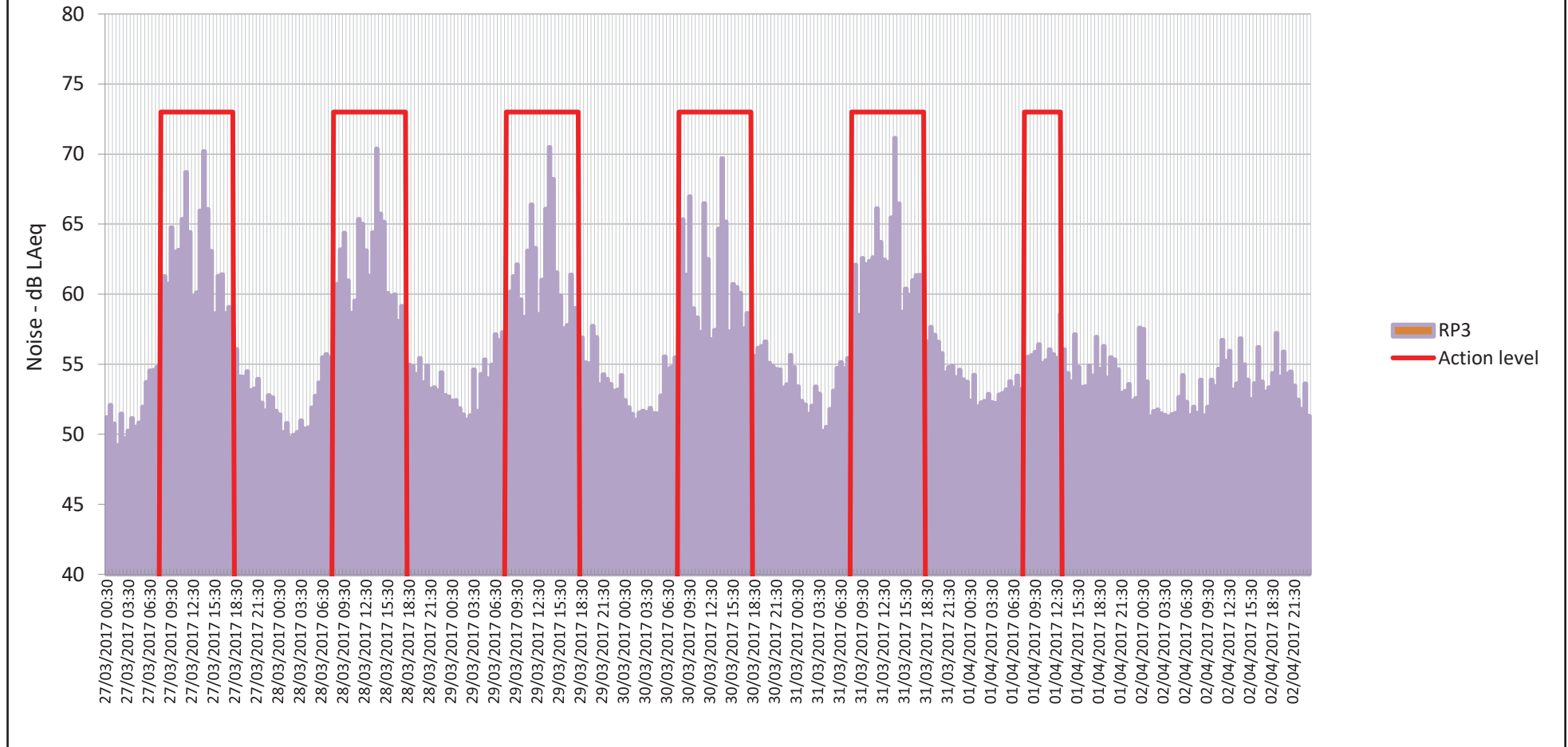
### **4.0 Measurement Results**

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.

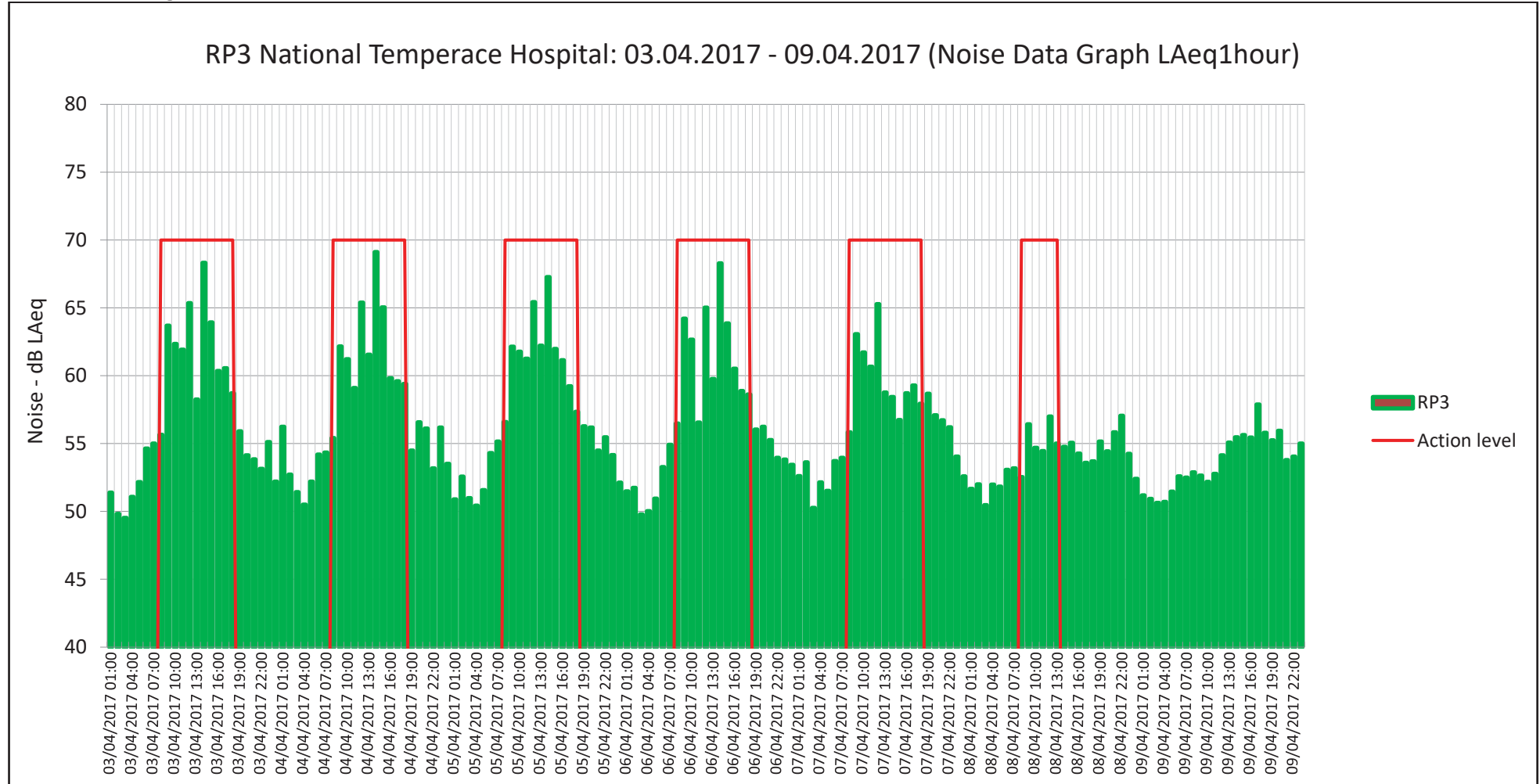
5.0 Noise Monitoring Graphs  
 RP3 Week ending 02/04/17



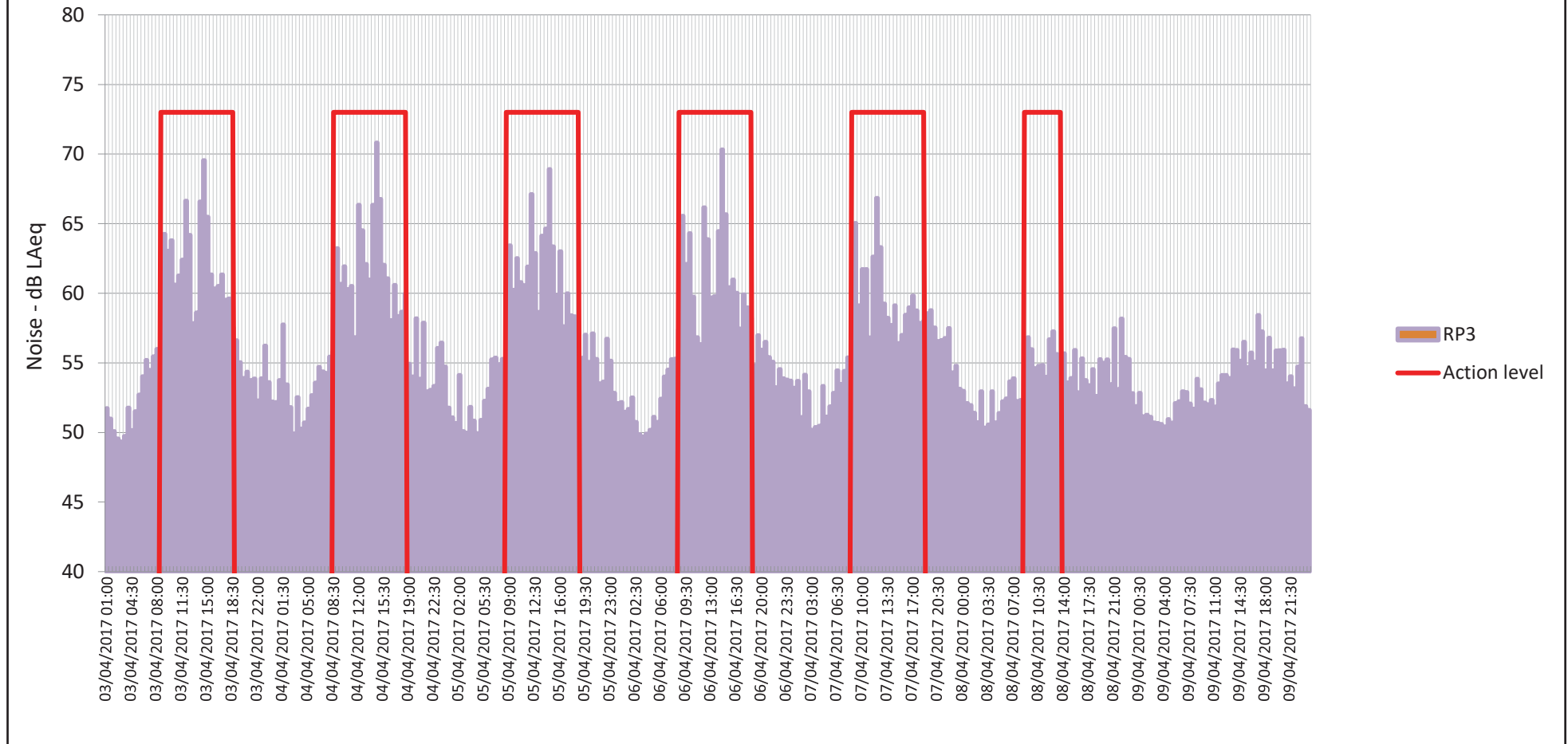
RP3 National Temperance Hospital: 27.03.2017 - 02.04.2017 (Noise data graph LAeq30minutes)



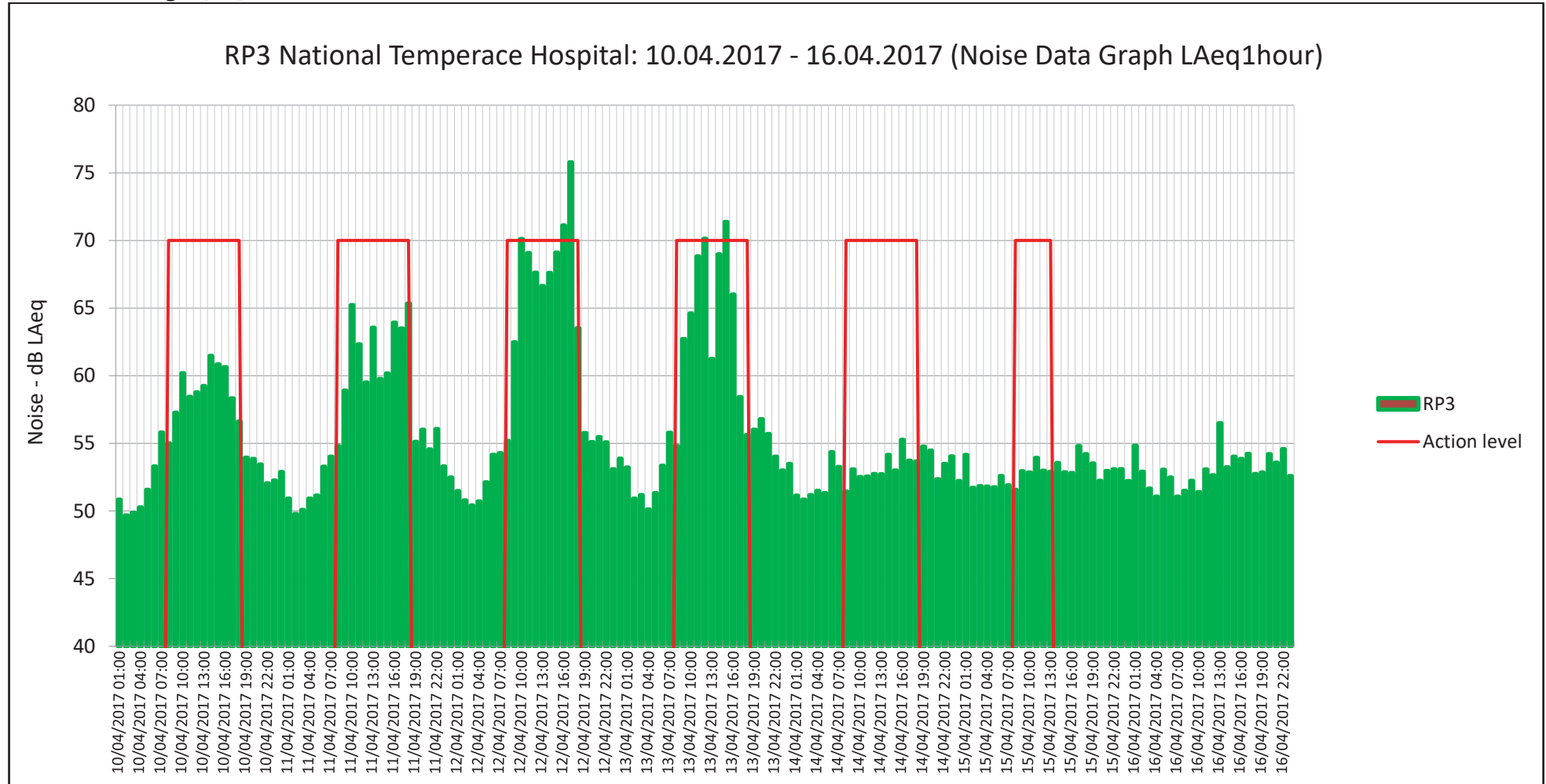
RP3 Week ending 09/04/17



RP3 National Temperance Hospital: 03.04.2017 - 09.04.2017 (Noise data graph LAeq30minutes)

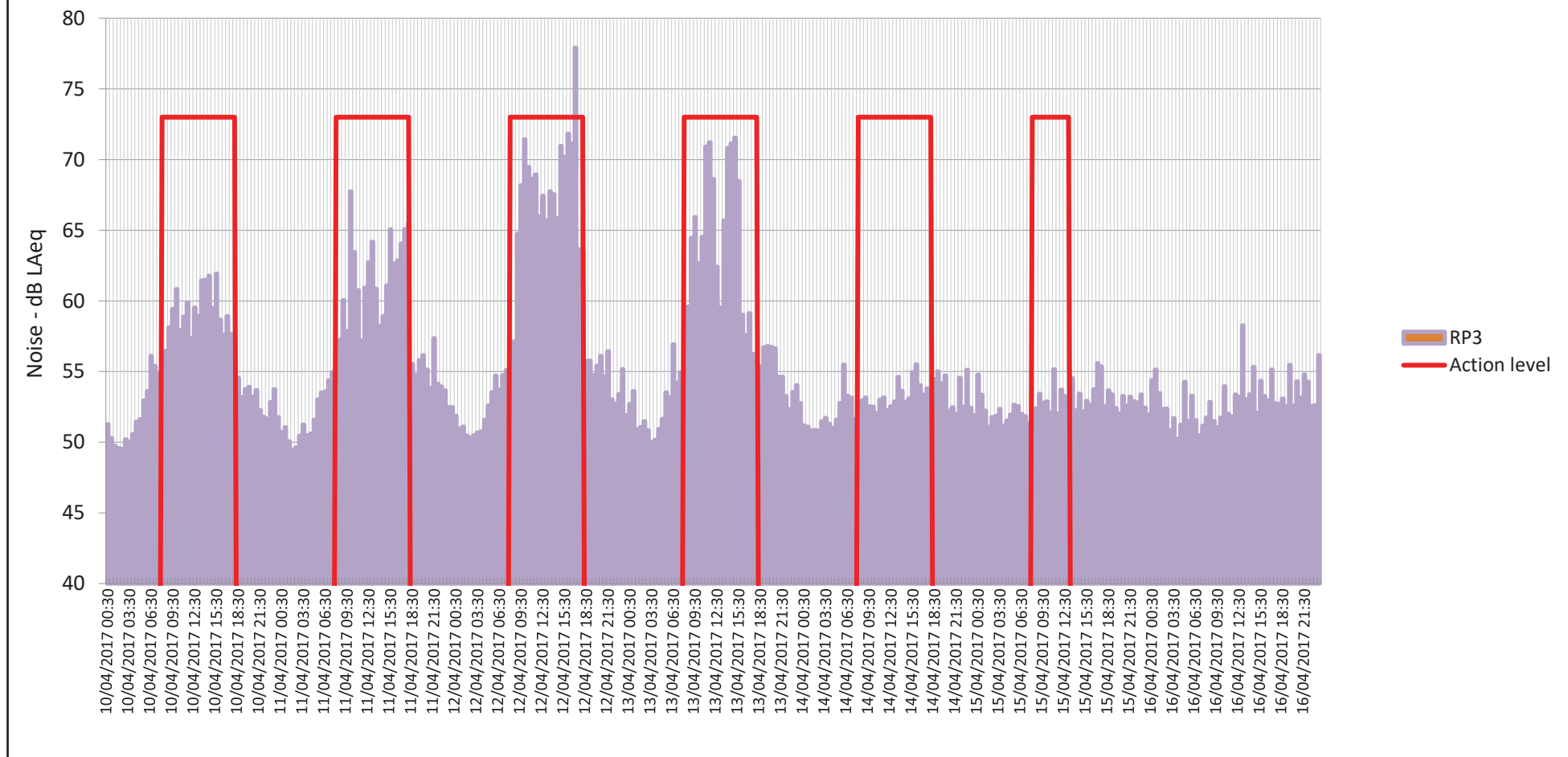


**RP3 Week ending 16/04/17**

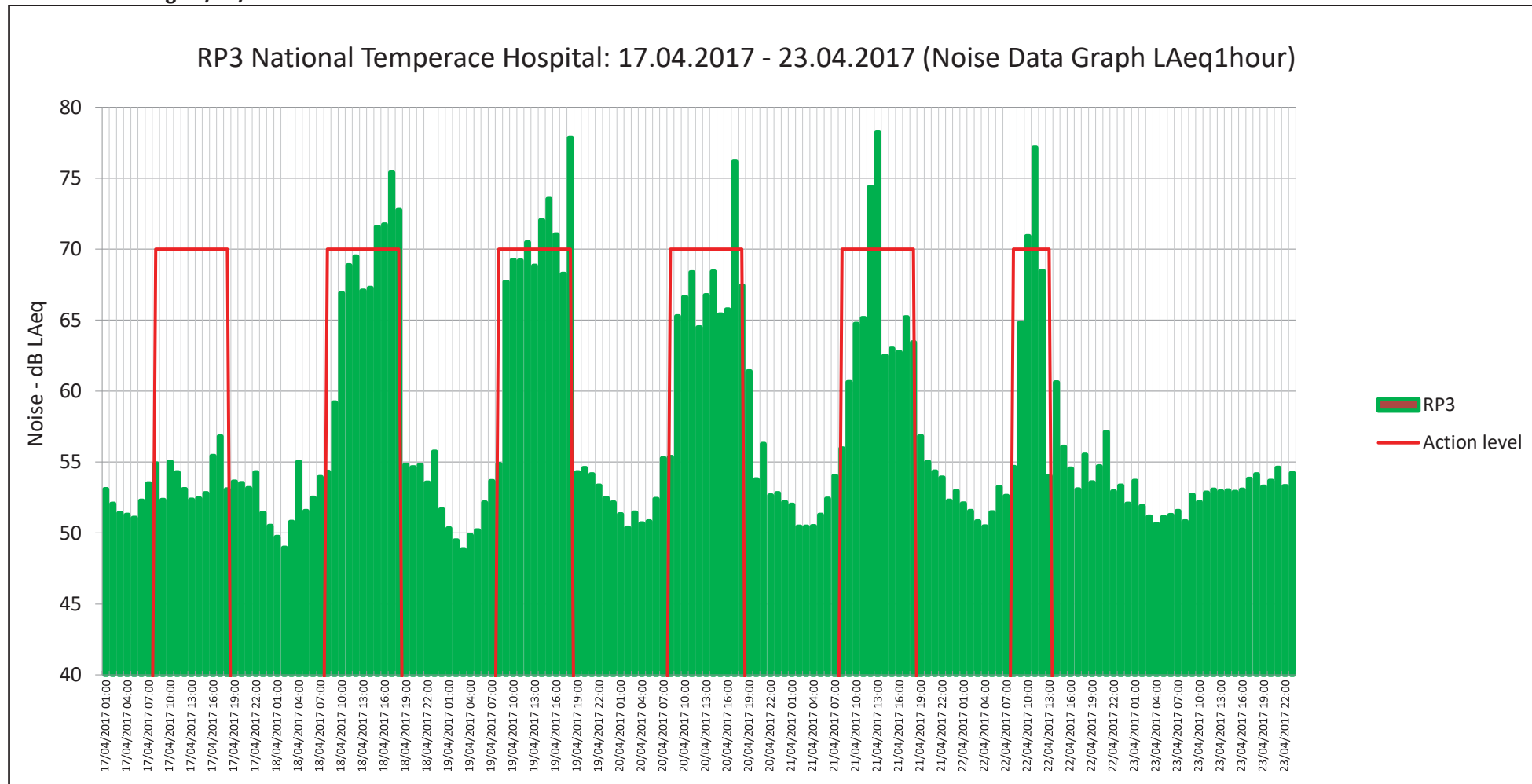




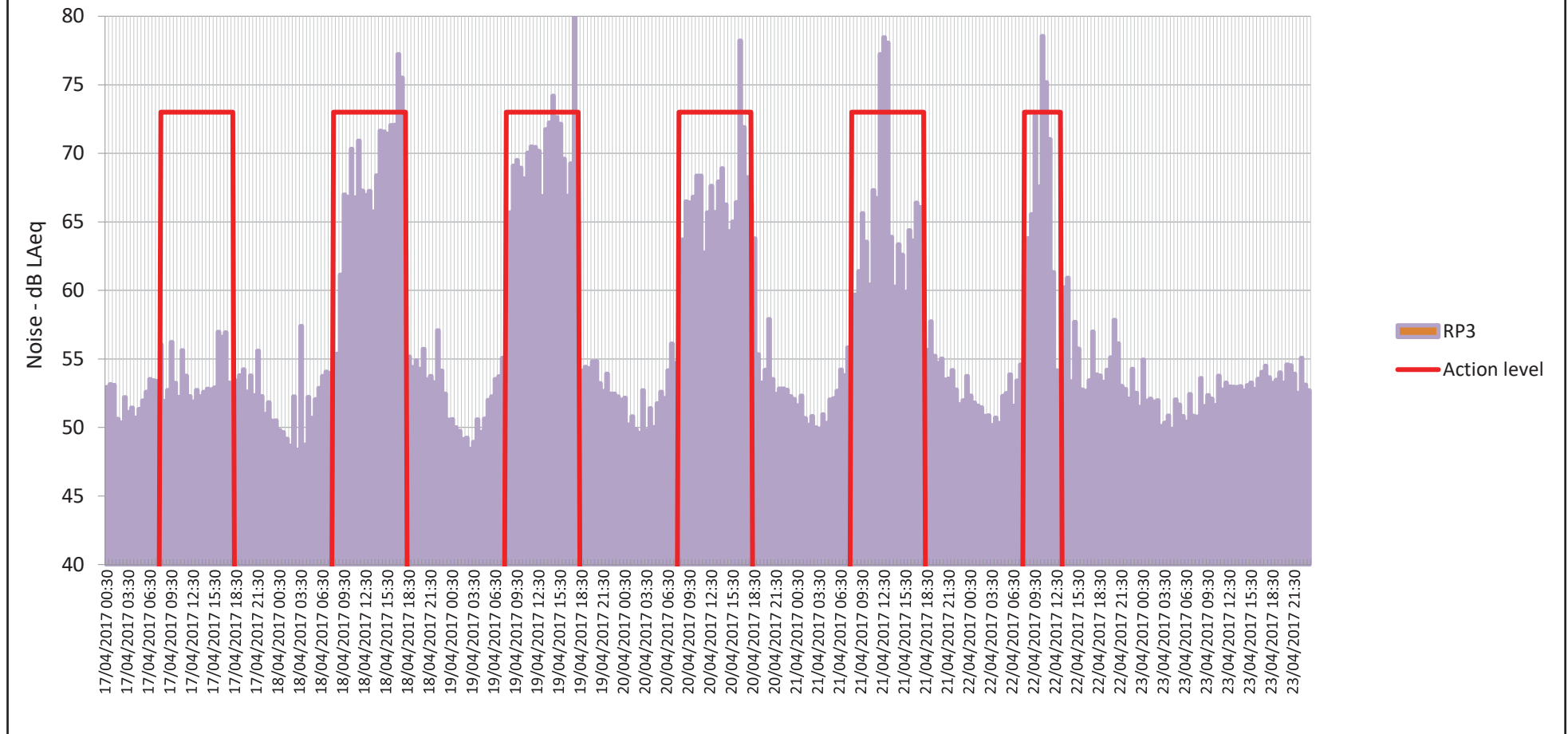
RP3 National Temperance Hospital: 10.04.2017 - 16.04.2017 (Noise data graph LAeq30minutes)



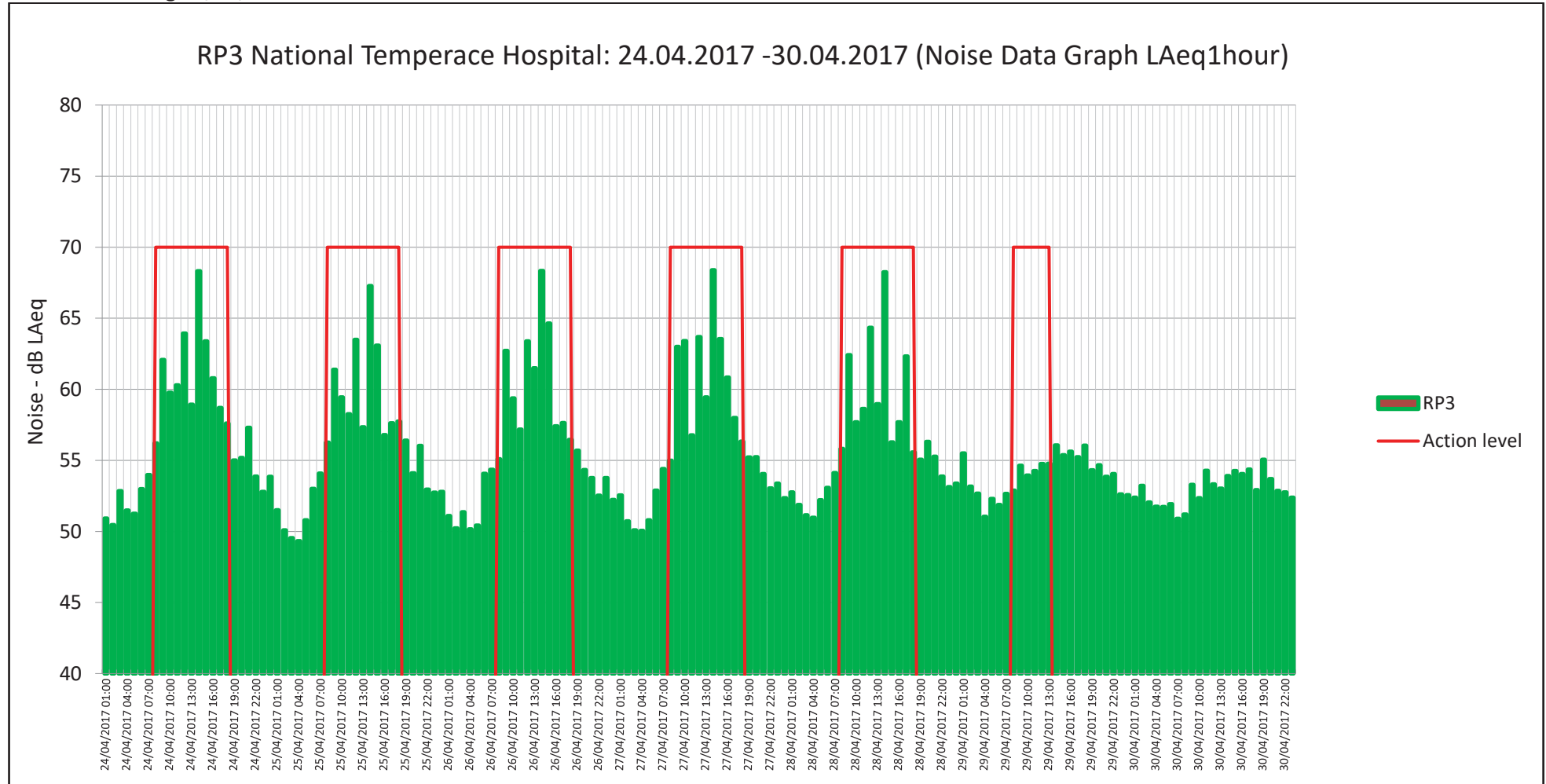
**RP3 Week ending 23/04/17**



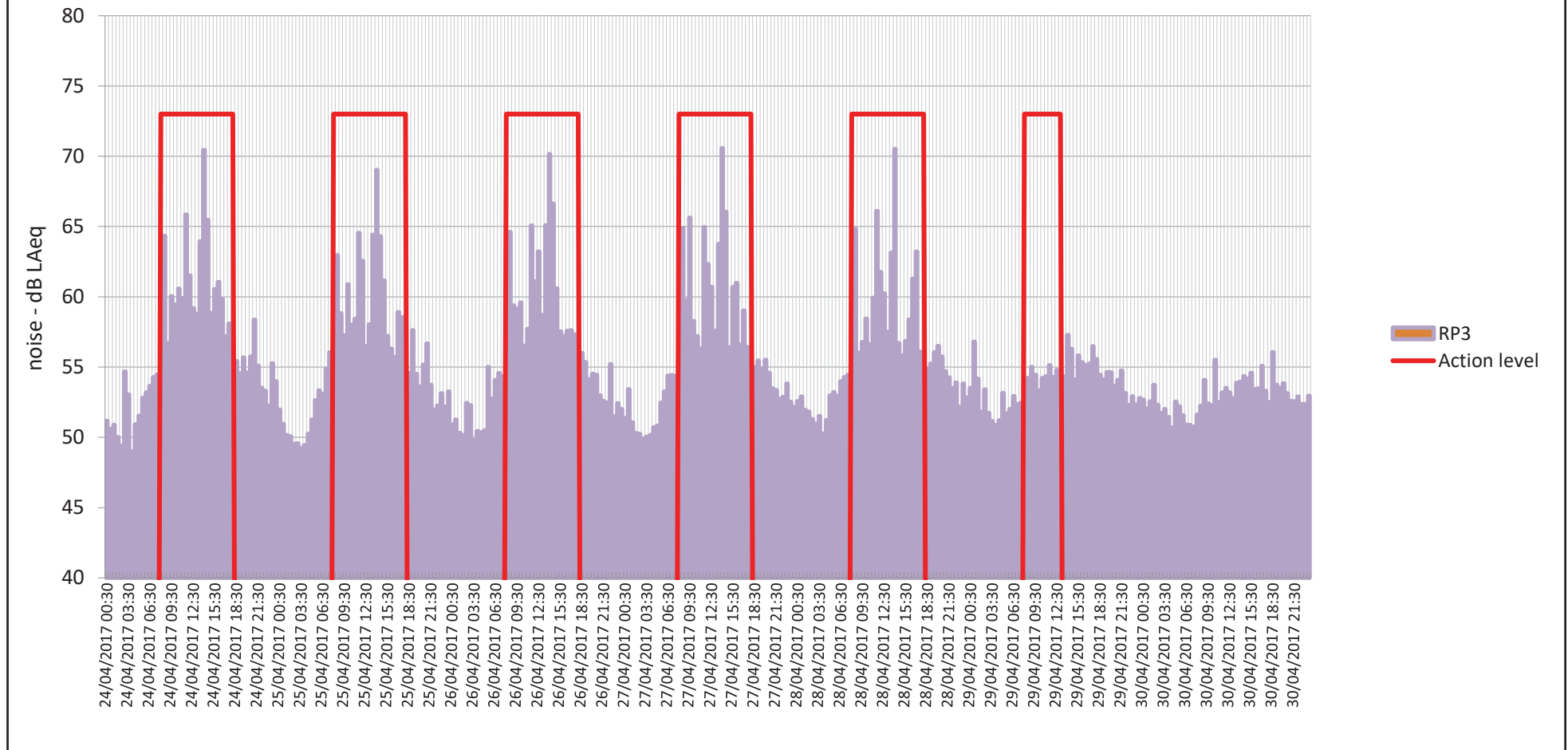
RP3 National Temperance Hospital: 17.04.2017 - 23.04.2017 (Noise data graph LAeq30minutes)



RP3 Week ending 30/04/17



RP3 National Temperance Hospital: 24.04.2017 - 30.04.2017 (Noise data graph LAeq30minutes)



## 6.0 Discussion

Unattended ambient noise monitoring has been undertaken during demolition associated activities at the National Temperance Hospital site at location RP3. These activities are included in section 1 of this report.

The unattended measured and recorded noise levels are presented graphically in section 5.

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 6.5:

dBLAeq10hours						dBLAeq5hours
Date	27/03/2017	28/03/2017	29/03/2017	30/03/2017	31/03/2017	01/04/2017
RP3	64.08	63.43	63.45	63.02	63.77	56.02
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	54.79	56.15	57.64	55.49	55.61	53.59
6 - 7 PM	55.19	54.92	56.12	55.85	57.15	55.31

**Table 6.1**

dBLAeq10hours						dBLAeq5hours
Date	03/04/2017	04/04/2017	05/04/2017	06/04/2017	07/04/2017	08/04/2017
RP3	63.41	63.57	62.84	63.19	60.86	55.63
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	55.66	55.42	56.60	56.48	55.83	52.53
6 - 7 PM	55.91	54.50	56.28	56.05	58.68	54.76

**Table 6.2**

dBLAeq10hours						dBLAeq5hours
Date	10/04/2017	11/04/2017	12/04/2017	13/04/2017	14/04/2017	15/04/2017
RP3	59.43	62.80	69.88	67.05	53.41	53.13
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	55.00	54.79	55.18	54.79	51.44	51.57
6 - 7 PM	53.94	55.11	55.77	56.00	54.77	53.54

**Table 6.3**

dBLAeq10hours						dBLAeq5hours
Date	17/04/2017	18/04/2017	19/04/2017	20/04/2017	21/04/2017	22/04/2017
RP3	54.02	70.63	72.05	69.22	70.52	71.74
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	54.89	54.31	54.86	55.35	55.95	54.64
6 - 7 PM	53.61	54.80	54.27	61.39	56.82	60.61

**Table 6.4**

dBLAeq10hours						dBLAeq5hours
Date	24/04/2017	25/04/2017	26/04/2017	27/04/2017	28/04/2017	29/04/2017
RP3	62.64	61.68	62.59	62.85	62.13	54.48
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	56.19	56.25	55.09	54.98	55.81	52.87
6 - 7 PM	55.00	56.39	55.69	55.22	55.05	56.06

**Table 6.5**

Several exceedances of the 63dBLAeq10hour action level can be seen highlighted on tables 6.1 to 6.5.

Noise at RP3 is impacted by noise from the children at the Maria Fidellis School during break times, from approximately 10.30 to 11.00 and again during lunch from 13.00 to 14.00. When this noise is removed, noise levels reduce below the 63dBLAeq10hour action level.

The noise levels recorded for the shoulder hours LAeq1hour were also below the LAeq30min action level.

Exceedances of the 63dBLAeq10hour action level can be seen highlighted on tables 6.1 to 6.4. These occurred during the Easter school holiday and would not impact on pupils. The exceedances were caused by school maintenance work and soil investigation work in the school

Similarly, exceedances of the 73dBLAeq30minute also occurred but also when the school was unoccupied by pupils and again the result of the same maintenance work and soil investigation work undertaken in the school during the Easter break.

At other times, (Tables 6.1 and 6.2) when the school is occupied, noise at RP3 is impacted by noise from the children at the school during break times, that occur from approximately 10.30 to 11.00 and again during lunch from 13.00 to 14.00. When this noise is removed, noise levels reduce below the 63dBLAeq10hour action level.

The noise levels recorded for the shoulder hours LAeq1hour were consistently below the 63dBLAeq10hour action level.

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