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National Temperance Hospital  
November 6

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

Telephone: 020 7944 4908

General email enquiries: [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

Website: [www.gov.uk/hs2](http://www.gov.uk/hs2)

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## Unattended Noise Monitoring Report

### Period: 31 October 2016 to 27 November 2016

Project No EEMC/065/2016  
Report No. EEMC-NTH-065.004 – NTH, HS2 Rev 00  
Client: Keltbray Limited  
Title: EEMC/065-004-NTH, HS2 - Unattended Noise Monitoring Report No.04  
Period: 31 October 2016 – 27 November 2016

#### 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:	00453872
Installation Date:	28/10/2016
Onsite Calibration:	28/10/2016
Laboratory Calibration: See attached certificate (Appendix 1)	03/10/2016 UCRT16/1301

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 located 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 31 October 2016 to 27 November 2016 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 potentially noisy works in this period were:

- Pumping water from basements 7 – 8 November
- Internal scaffold erection 3 – 25 November
- External scaffold erection 1 – 4 November
- Asbestos removal 1 – 25 November
- Soft strip 1 – 25 November
- External hoarding 1 – 4 November
- Roof strip 22 – 25 November
- Dismantling of turrets 23 – 25 November

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 an 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 while early demolition works were ongoing 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 74dBLAeq10hour. This level is indicated by the red line on the graphs.

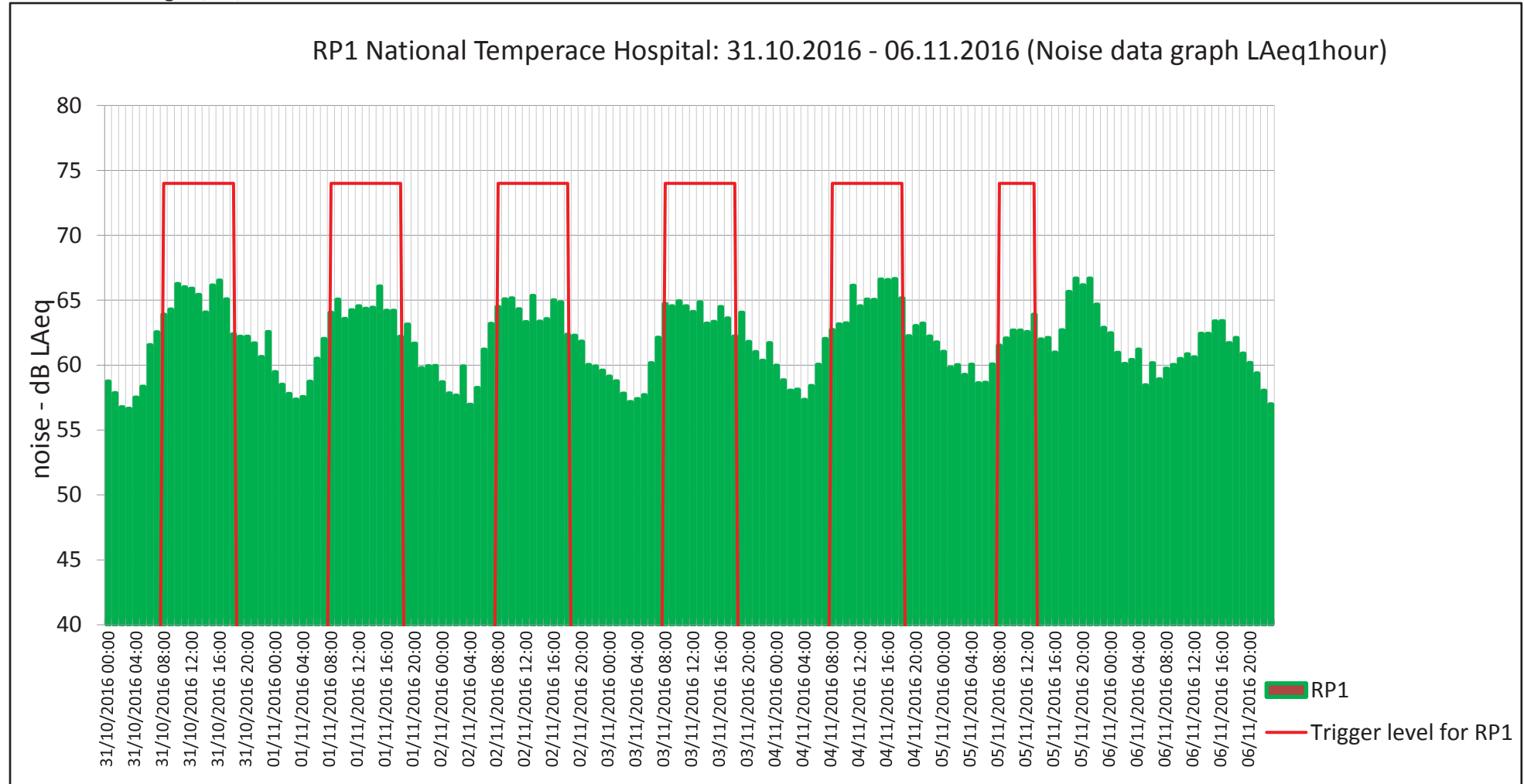
The measured unattended noise levels can be used to compare with measured and recorded noise levels during the preparatory demolition activities.

#### **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.

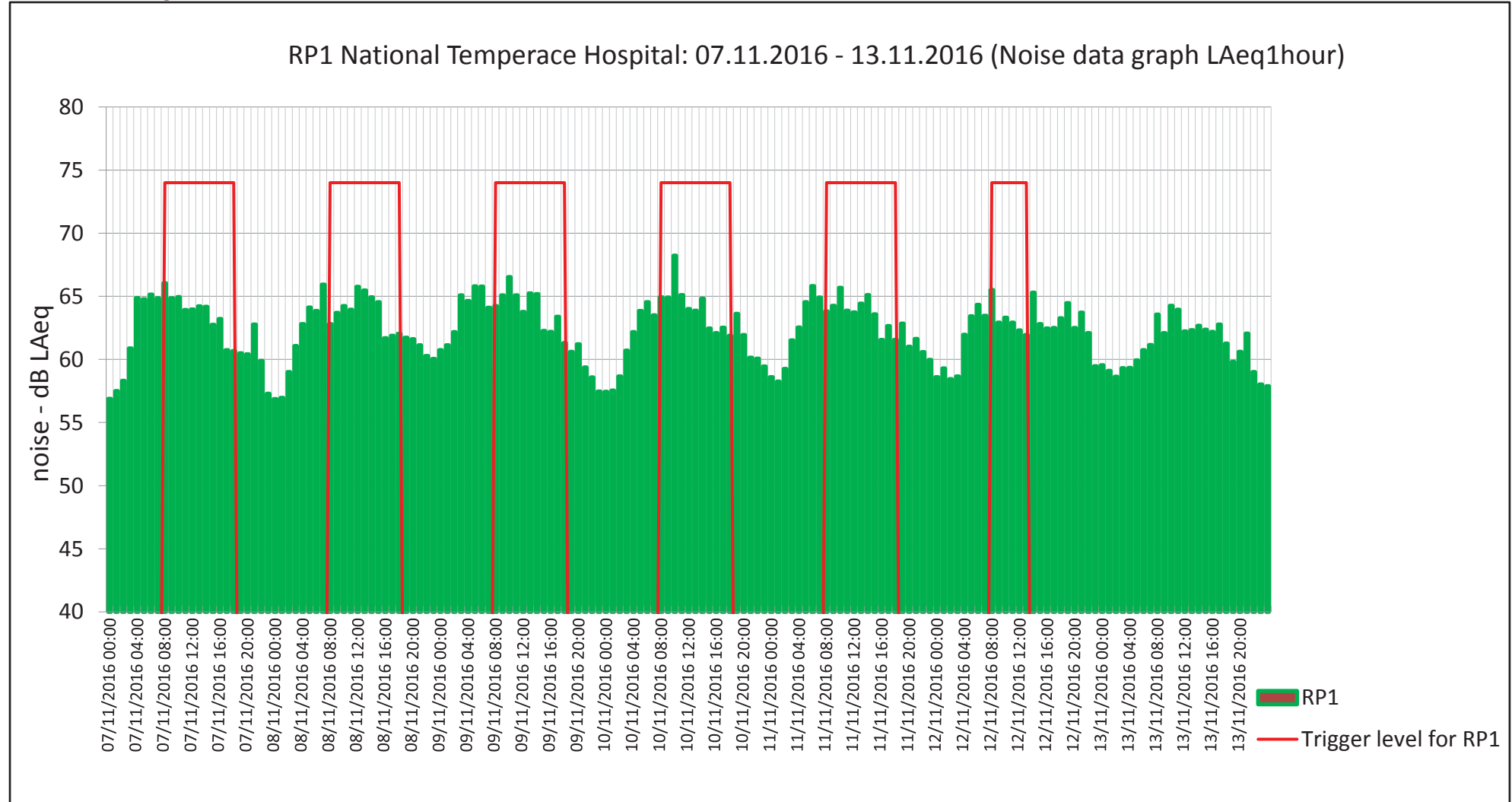
**5.0 Noise Monitoring Graphs**

RP1 Week ending 06/11/16

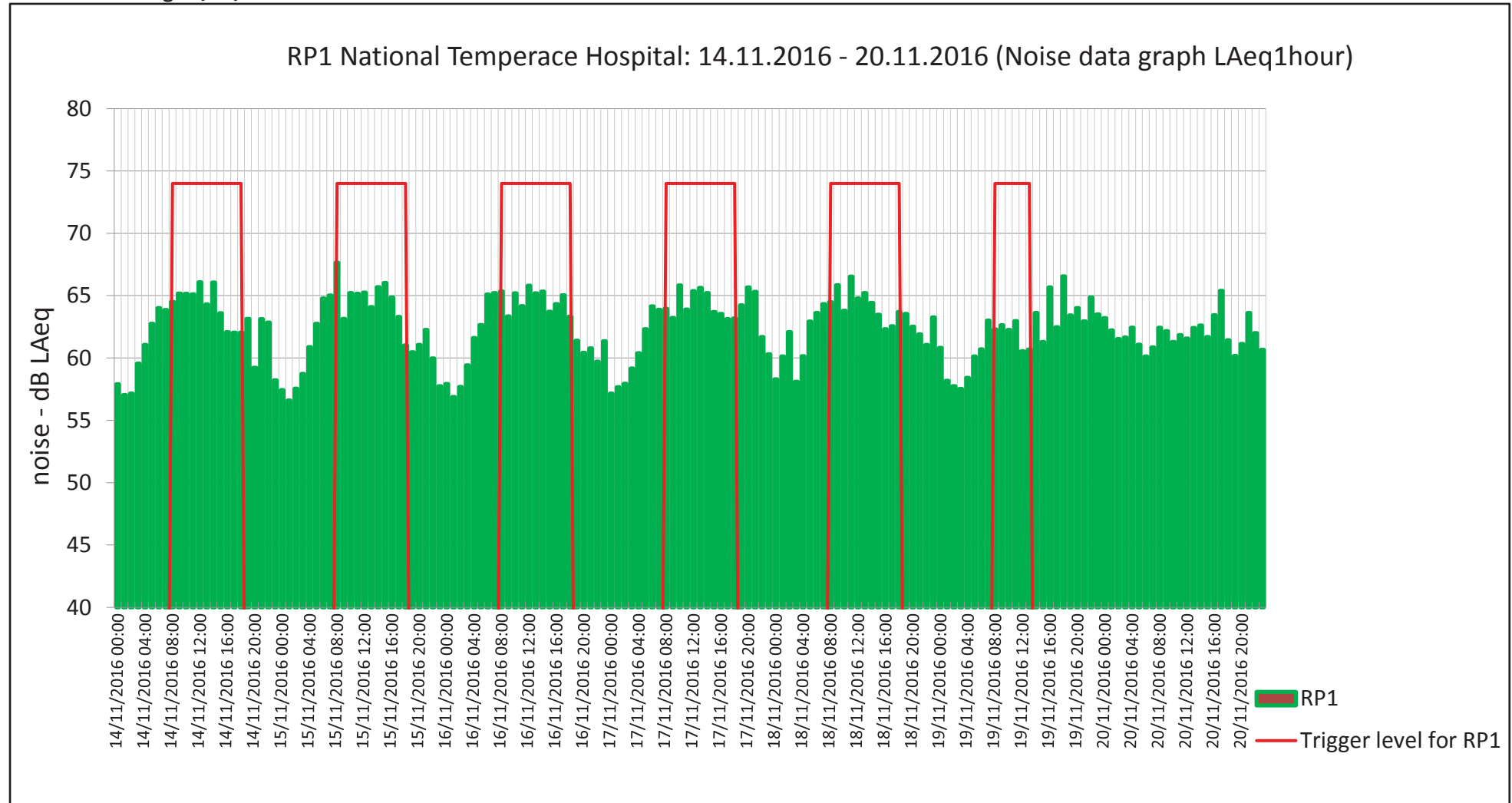




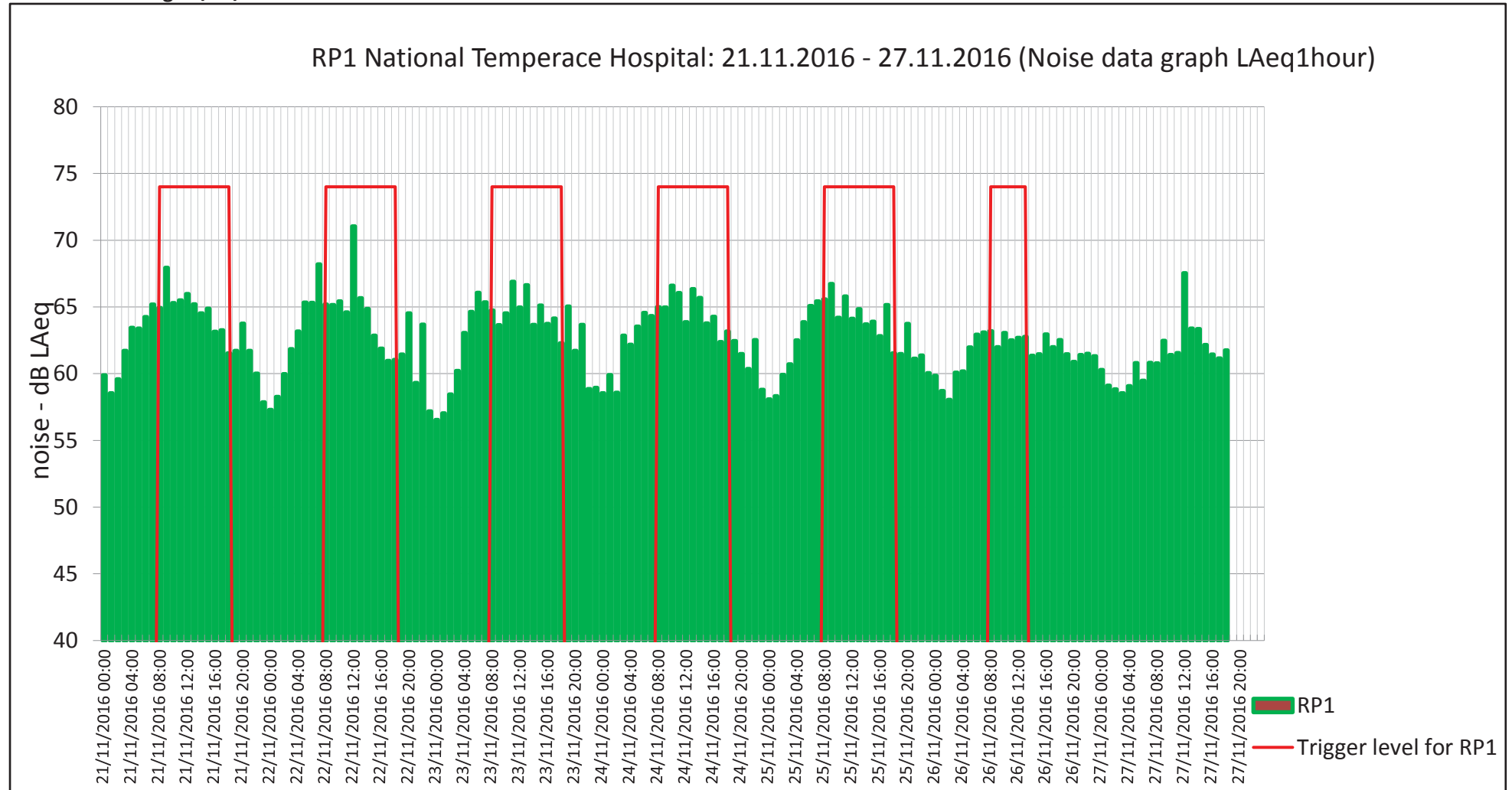
RP1 Week ending 13/11/16



RP1 Week ending 20/11/16



RP1 Week ending 27/11/16



## 6.0 Discussion

Unattended ambient noise monitoring has been undertaken during works for phase 1 at National Temperance Hospital at RP1. The noise monitor at RP1 was installed on the 28 October 2016.

The activities in the period 31 October 2016 to 27 November 2016 would include: pumping water from basement levels, internal scaffold, external scaffold, asbestos removal, soft strip, external hoarding, Demolition of entrance building, secondary window installation Maria Fidelis School and roof strip.

The unattended and recorded measured noise levels are presented graphically in this report. The noise monitoring unit at RP1 was installed 28 October 2016.

The daily LAeq10hour from 08.00 to 18.00 Monday to Friday, and 08.00 to 13.00 on Saturday were as Table 6.3:

dBLAeq10hours						dBLAeq5hours
Date	31/10/2016	01/11/2016	02/11/2016	03/11/2016	04/11/2016	05/11/16
<b>RP1</b>	65.43	64.48	64.51	64.26	65.36	62.78
<b>Action Level</b>	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	62.61	62.59	63.10	62.19	62.21	60.59
6 - 7 PM	62.51	62.74	62.29	63.05	63.19	66.28

**Table 6.1**

dBLAeq10hours						dBLAeq5hours
Date	07/11/2016	08/11/2016	09/11/2016	10/11/2016	11/11/2016	12/11/16
<b>RP1</b>	64.73	64.57	65.11	64.99	64.67	64.09
<b>Action Level</b>	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	65.06	62.91	64.65	62.29	62.86	62.10
6 - 7 PM	62.54	64.44	62.60	62.46	63.70	62.97

**Table 6.2**

dBLAeq10hours						dBLAeq5hours
Date	14/11/2016	15/11/2016	16/11/2016	17/11/2016	18/11/2016	19/11/16
<b>RP1</b>	64.85	65.26	64.87	64.59	64.74	62.36
<b>Action Level</b>	74	74	74	74	74	74
dBLAeq1hour						
7 - 8 AM	62.81	64.05	62.79	62.87	63.06	60.36
6 - 7 PM	62.79	64.83	65.49	63.02	61.70	65.74

**Table 6.3**

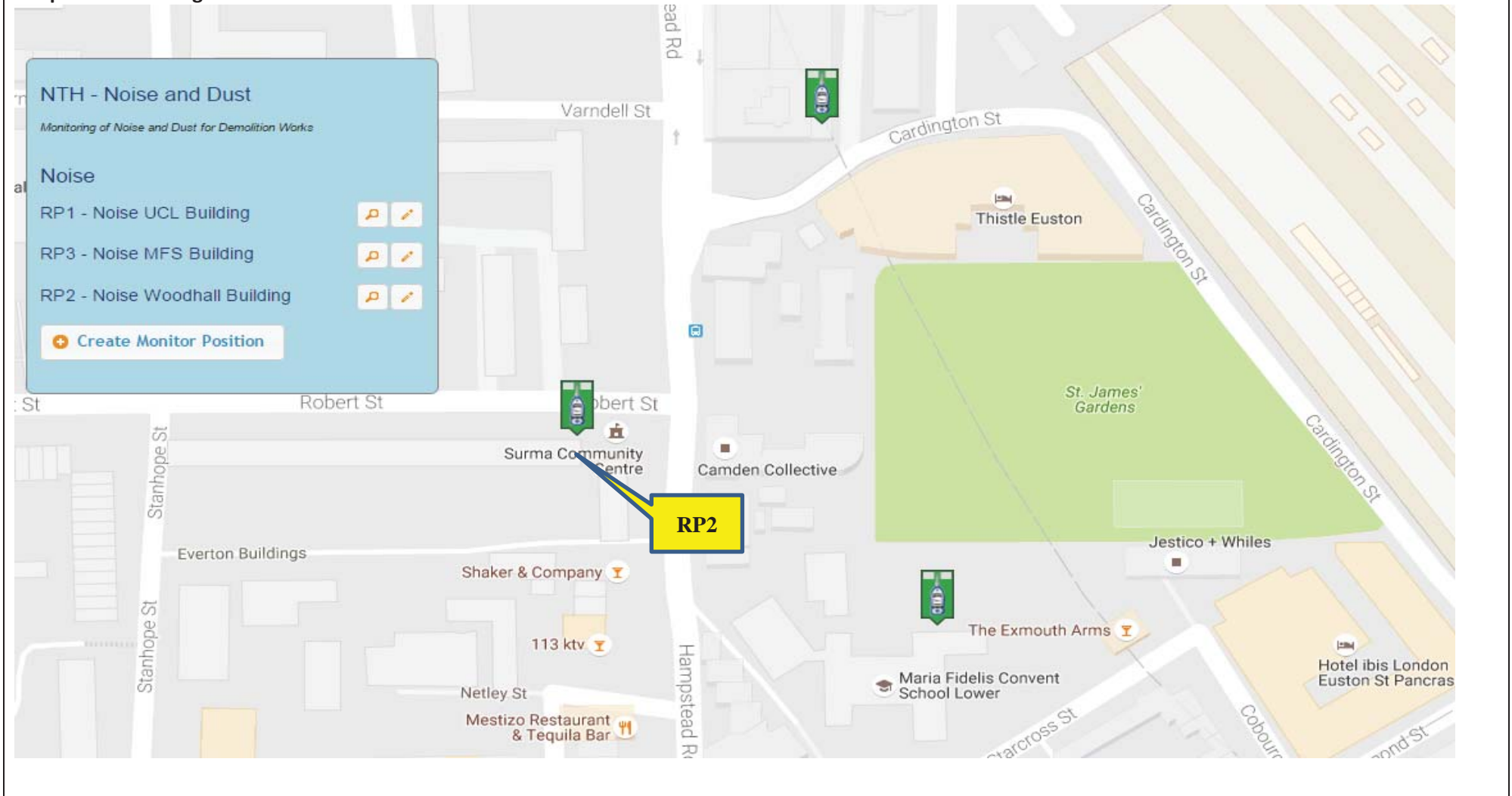
<b>dBLAeq10hours</b>						<b>dBLAeq5hours</b>
<b>Date</b>	21/11/2016	22/11/2016	23/11/2016	24/11/2016	25/11/2016	26/11/16
<b>RP1</b>	65.43	66.52	65.36	65.21	65.05	62.95
<b>Action Level</b>	74	74	74	74	74	74
<b>dBLAeq1hour</b>						
<b>7 - 8 AM</b>	63.52	64.89	62.47	62.64	63.20	60.44
<b>6 - 7 PM</b>	64.36	62.36	64.95	65.05	63.26	62.14

**Table 6.4**

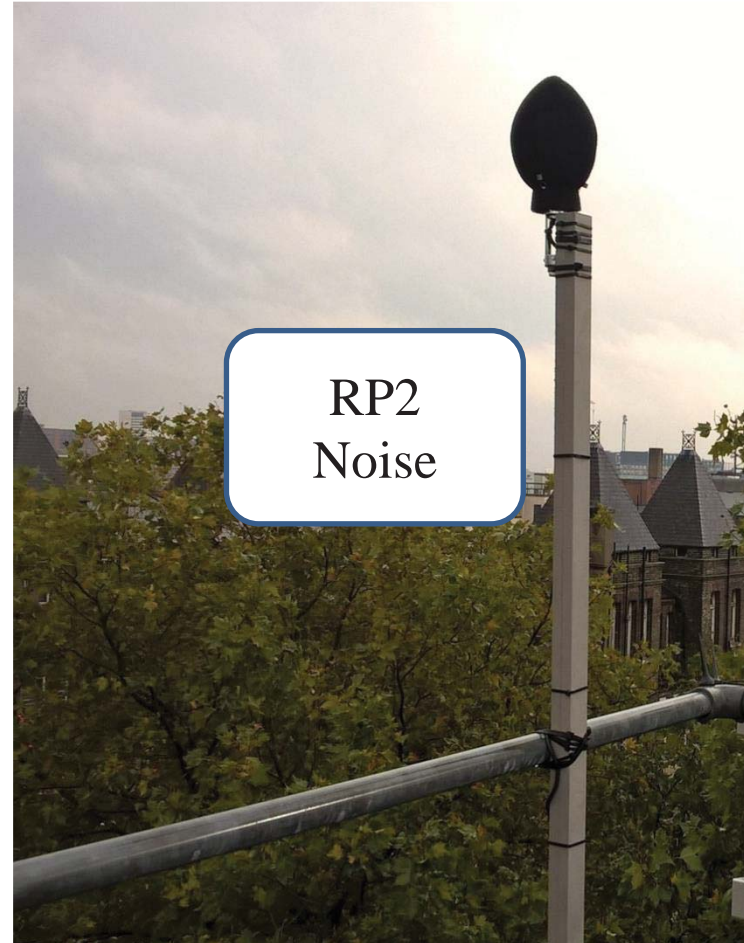
There were no exceedances of the 74dBLAeq10hour action level in this period. Recorded levels were significantly below the action level.



**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 31 October 2016 to 27 November 2016 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 the early demolition activities on the site.

The potentially noisy works in this period were:

- Pumping water from basements 7 – 8 November
- Internal scaffold erection 3 – 25 November
- External scaffold erection 1 – 4 November
- Asbestos removal 1 – 25 November
- Soft strip 1 – 25 November
- External hoarding 1 – 4 November
- Roof strip 22 – 25 November
- Dismantling of turrets 23 – 25 November

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).

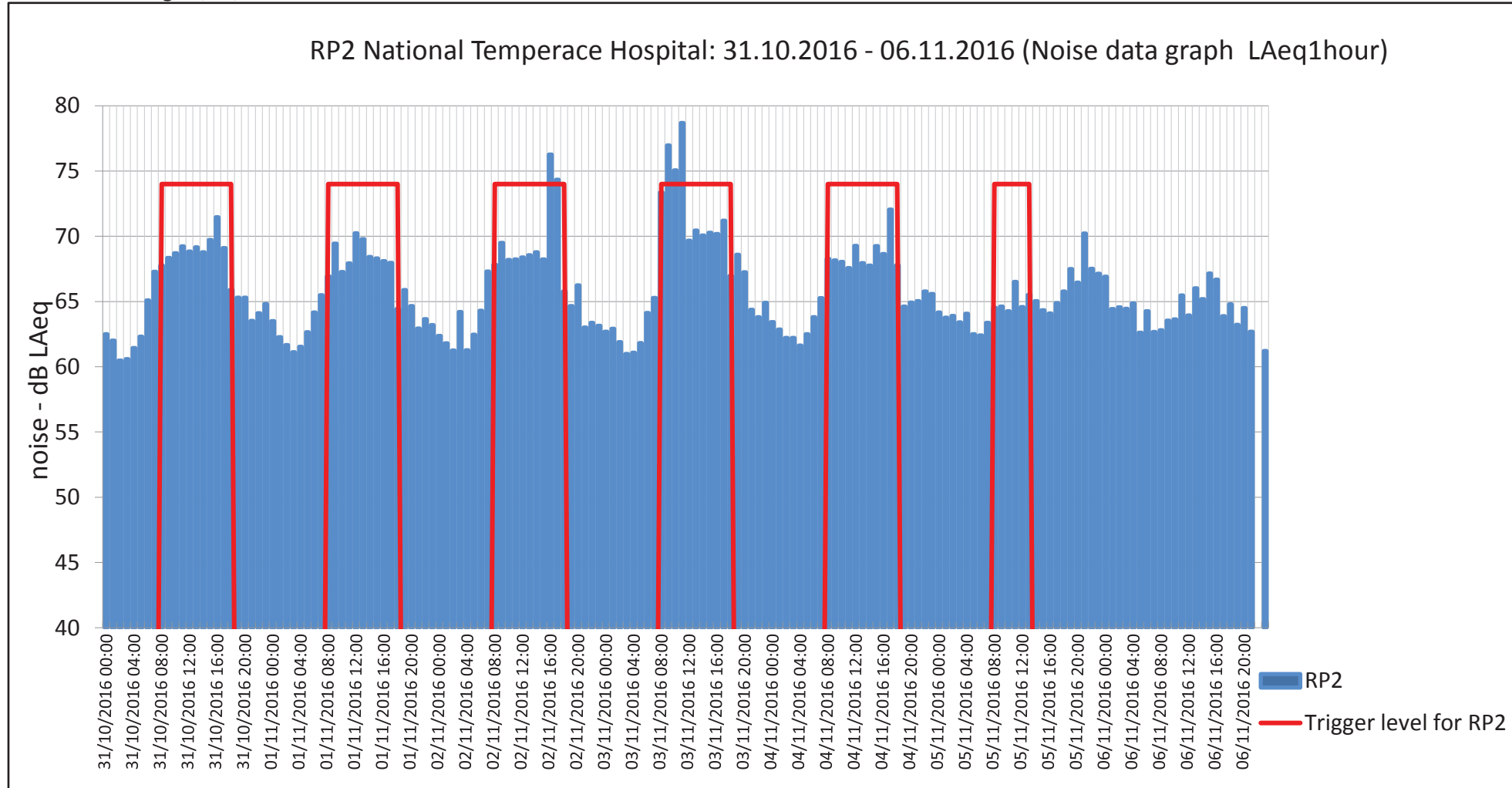
Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action level at RP2 is 71dBLAeq10hour

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

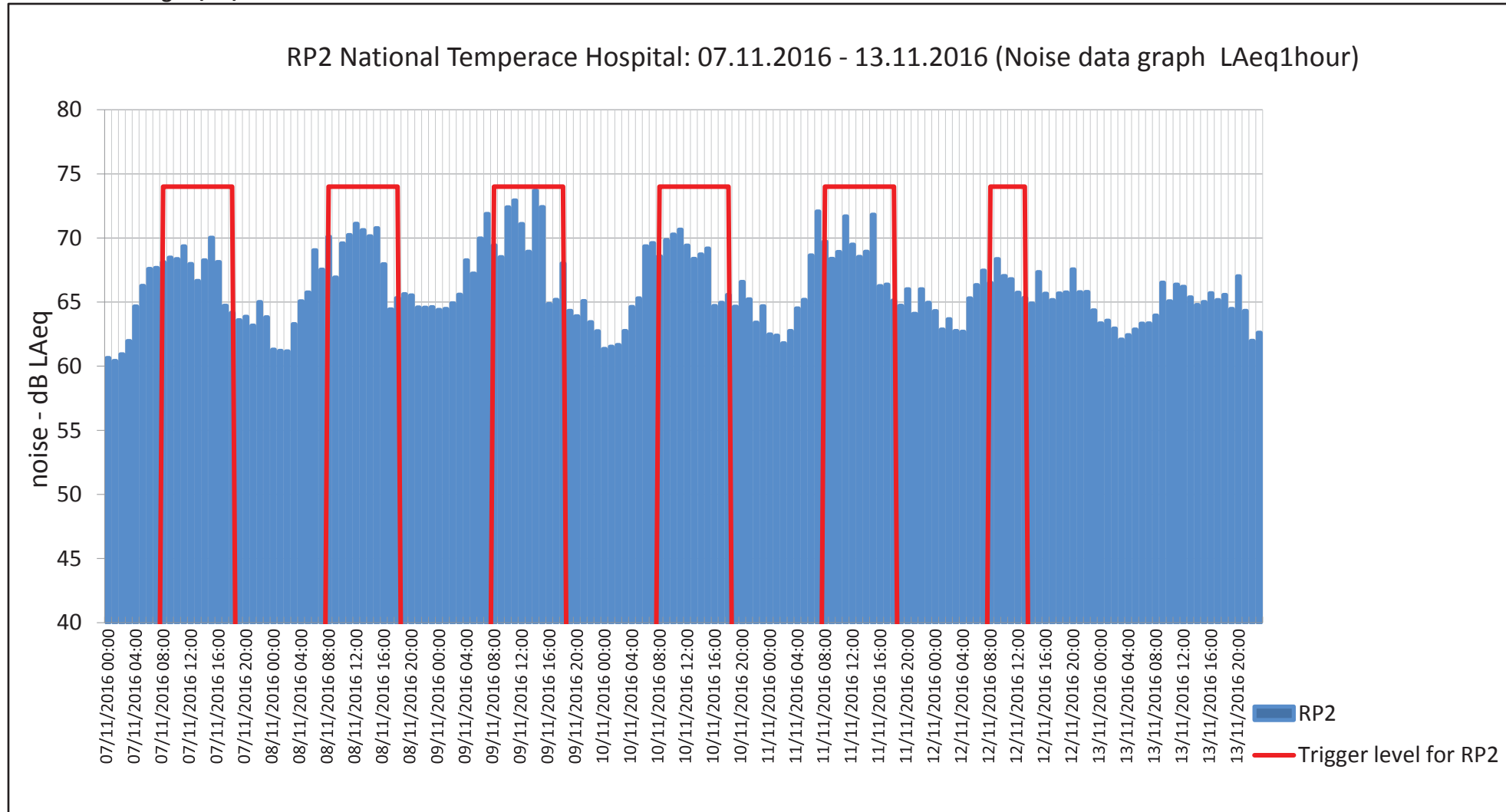
#### **4.0 Measurement Results**

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

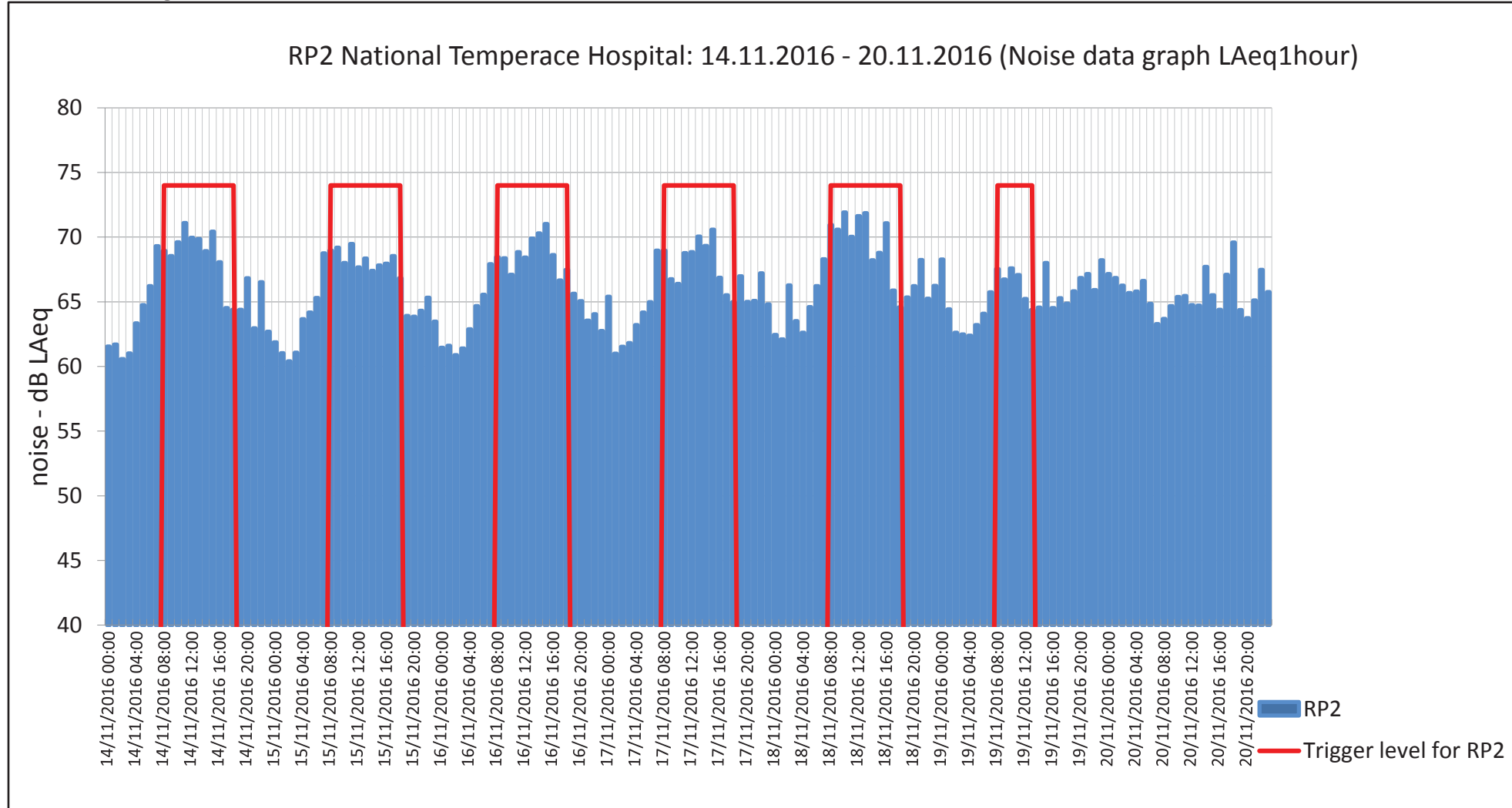
5.0 Measurement Results  
RP2 Week ending 06/11/16



RP2 Week ending 13/11/16

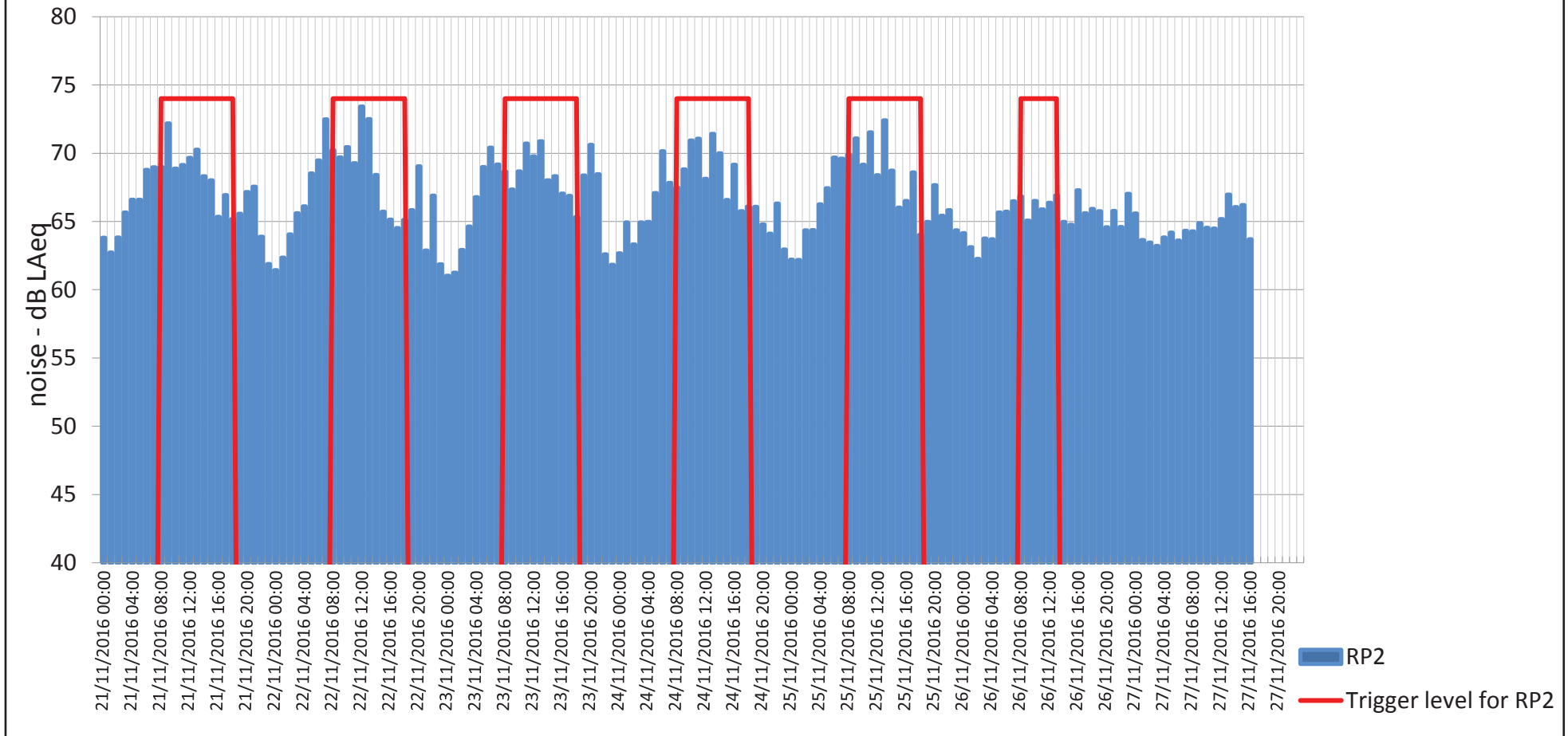


RP2 Week ending 20/11/16



RP2 Week ending 27/11/16

RP2 National Temperance Hospital: 21.11.2016 - 27.11.2016 (Noise data graph LAeq1hour)



## 6.0 Discussion

Unattended ambient unattended noise monitoring has been undertaken for the pre-demolition commencement and enabling activities for at National Temperance Hospital at RP2.

The activities in this period from 31 October 2016 to 27 November 2016 would include: pumping water from basement levels, internal scaffold, external scaffold, asbestos removal, soft strip, external hoarding, Demolition of entrance building, secondary window installation Maria Fidelis School and roof strip

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, and 08.00 to 13.00 on Saturday were as Tables 6.1, 6.2, 6.3, and 6.4:

dBLAeq10hours						dBLAeq5hours
Date	31/10/2016	01/11/2016	02/11/2016	03/11/2016	04/11/2016	05/11/16
RP2	69.21	68.53	70.95	73.86	69.02	65.08
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	67.33	65.75	67.15	65.22	65.71	63.92
6 - 7 PM	66.00	64.53	65.38	67.20	65.73	66.24

**Table 6.1**

dBLAeq10hours						dBLAeq5hours
Date	07/11/2016	08/11/2016	09/11/2016	10/11/2016	11/11/2016	12/11/16
RP2	68.43	69.78	71.41	69.44	70.04	67.22
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	66.51	65.76	67.66	65.37	65.56	65.48
6 - 7 PM	66.82	67.97	65.34	64.82	67.64	65.78

**Table 6.2**

dBLAeq10hours						dBLAeq5hours
Date	14/11/2016	15/11/2016	16/11/2016	17/11/2016	18/11/2016	19/11/16
RP2	69.54	63.39	68.99	68.76	70.52	67.05
Action Level	71	71	71	71	71	71
dBLAeq1hour						
7 - 8 AM	66.29	65.77	65.47	65.33	66.25	64.48
6 - 7 PM	64.90	68.50	67.69	64.95	64.84	65.47

**Table 6.3**

<b>dBLAeq10hours</b>						<b>dBLAeq5hours</b>
<b>Date</b>	21/11/2016	22/11/2016	23/11/2016	24/11/2016	25/11/2016	26/11/16
<b>RP2</b>	69.44	70.73	69.49	69.54	70.03	66.34
<b>Action Level</b>	71	71	71	71	71	71
<b>dBLAeq1hour</b>						
<b>7 - 8 AM</b>	66.32	67.30	67.01	65.36	66.56	64.13
<b>6 - 7 PM</b>	67.19	65.08	67.09	69.82	65.40	65.39

**Table 6.4**

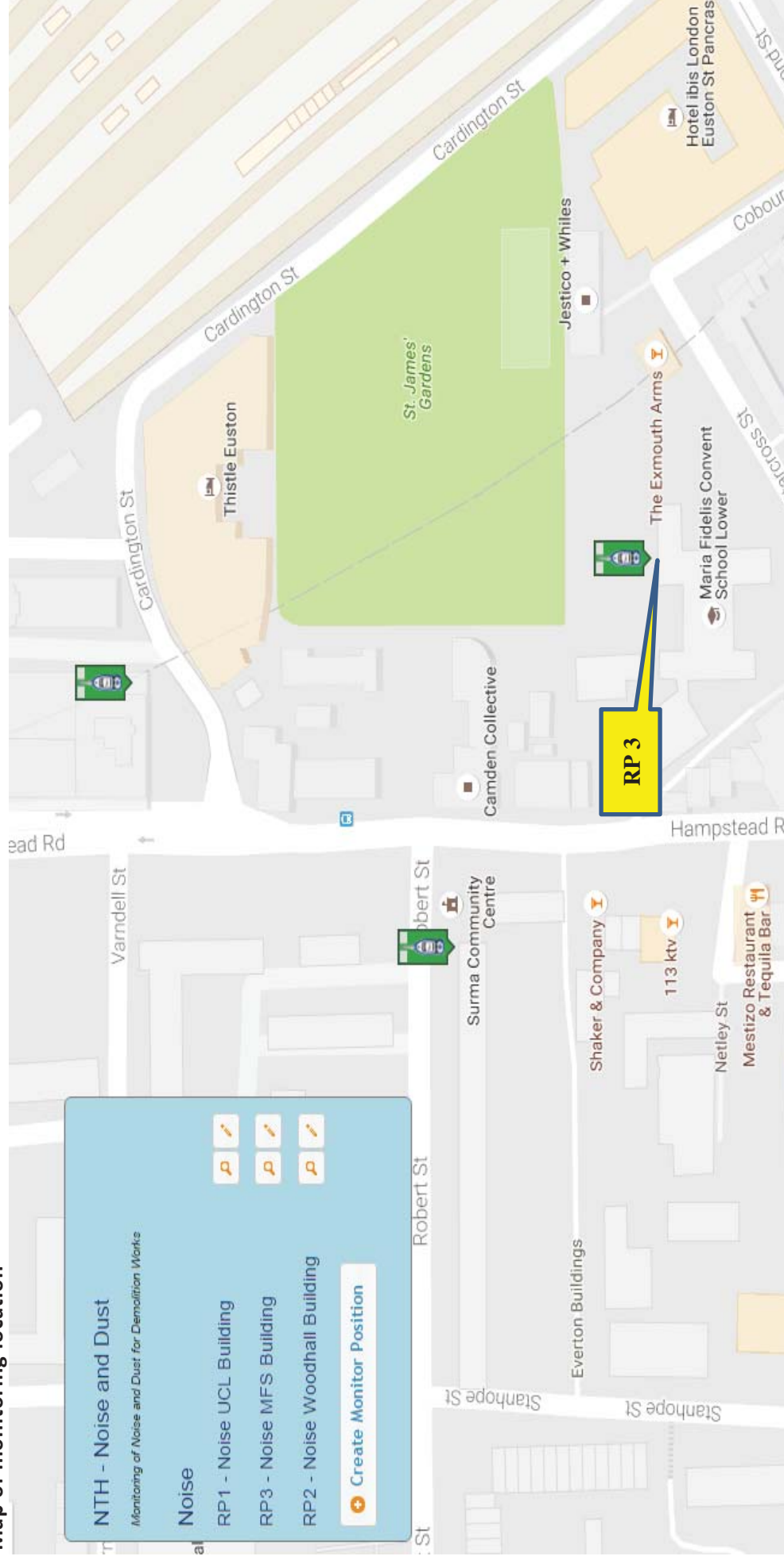
An exceedance occurred on the 3/11 and 9/11 of the 71dBLAeq10hour action level. From the audio evidence on Livenviro these two exceedances were the result of works on the Lovell site on the corner of Roberts Road and Hampstead Road opposite NTH (National Temperance Hospital) site. Heavy banging and impact noise possibly associated with releasing of concrete formwork and falsework on the Lovell site caused these two exceedances of the daily noise action level.

It is very likely that noise from the Lovell site which has no screening on any floor will have significant influence on the cumulative noise levels recorded at RP2.

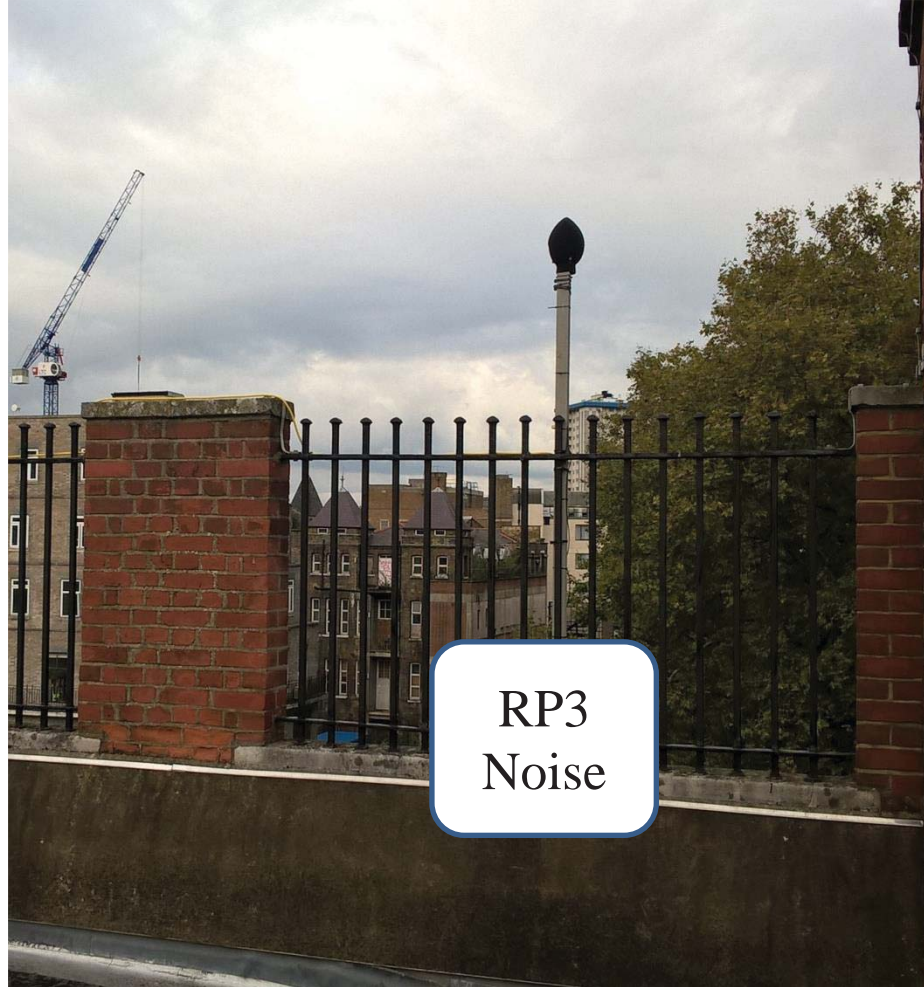




**Map of monitoring location**



Photos of monitor



RP3  
Noise



RP3  
Noise

## **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 31 October 2016 to 25 November 2016. 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 early demolition activities

The potentially noisy works in this period were:

- Pumping water from basements 7 – 8 November
- Internal scaffold erection 3 – 25 November
- External scaffold erection 1 – 4 November
- Asbestos removal 1 – 25 November
- Soft strip 1 – 25 November
- External hoarding 1 – 4 November
- Roof strip 22 – 25 November
- Dismantling of turrets 23 – 25 November

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.

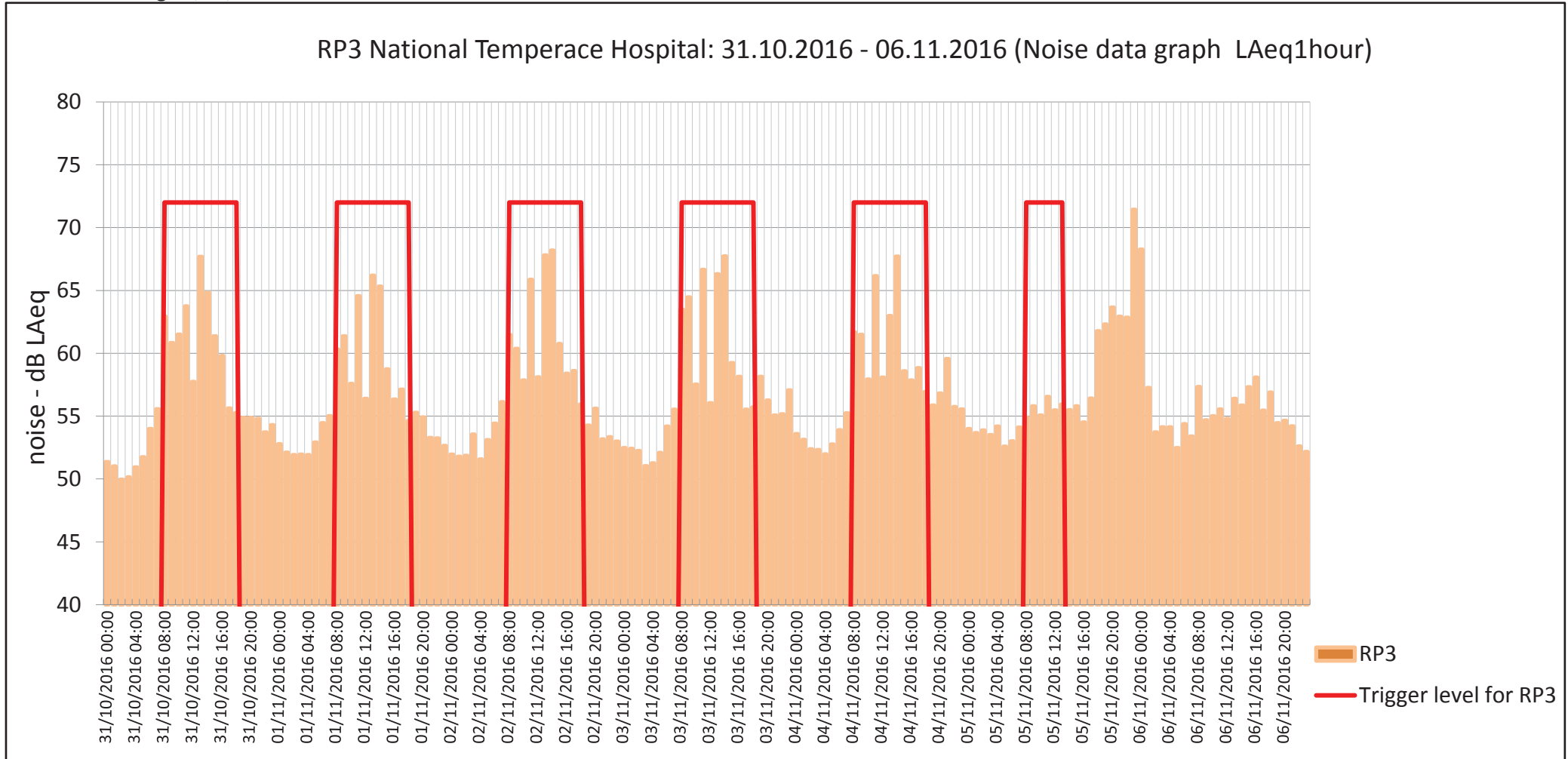
Noise levels have been recorded for the measurement periods of 08.00 to 18.00 Monday to Friday and 08.00 to 13.00 on Saturdays. These times have been agreed with LBC to be the core hours within which noisy demolition activities can proceed. The agreed action levels at RP3 are 63dB LAeq 10hour and 73dB LAeq 0.5hour.

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

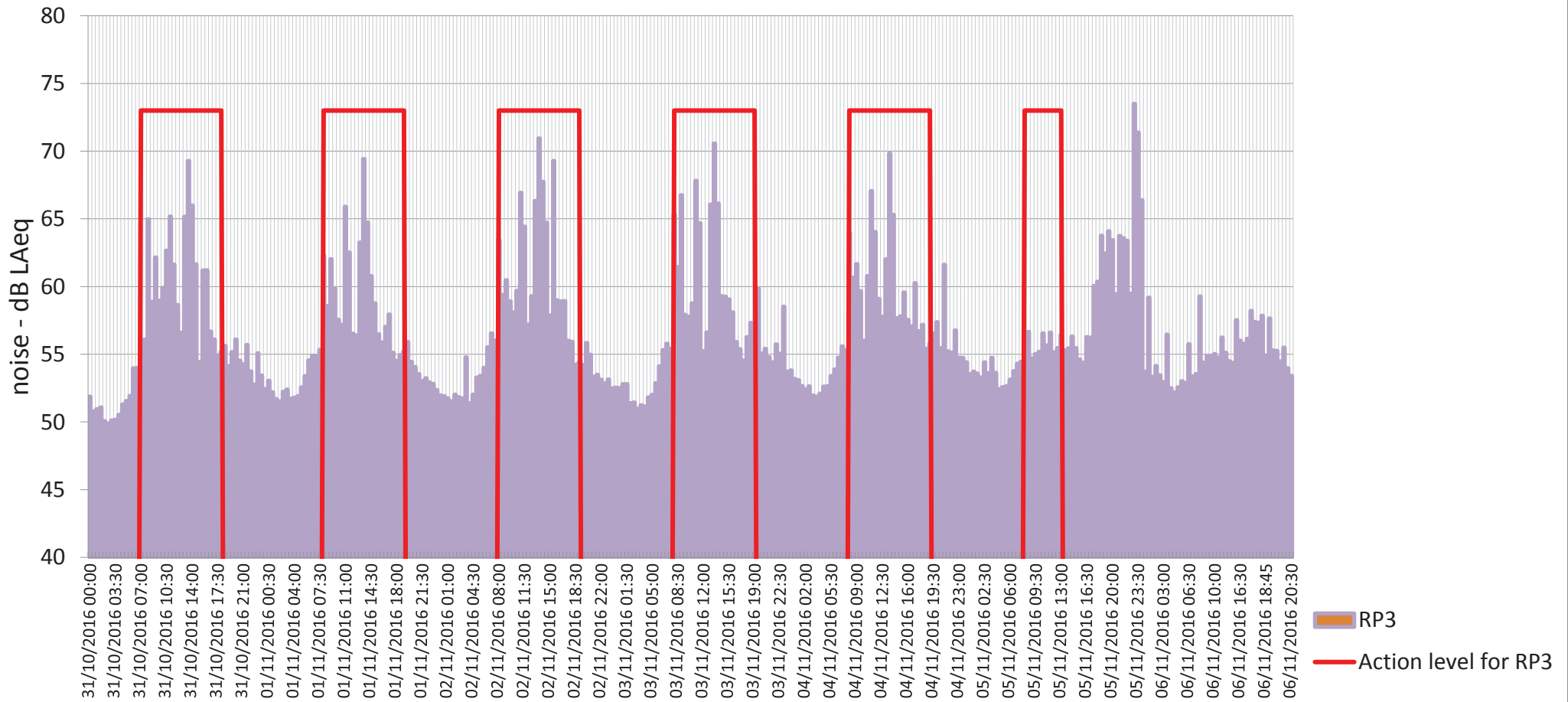
#### **4.0 Measurement Results**

The recorded unattended noise measurements in this period are presented as graphs in section 5.0 of this report using LAeq 1hour data points.

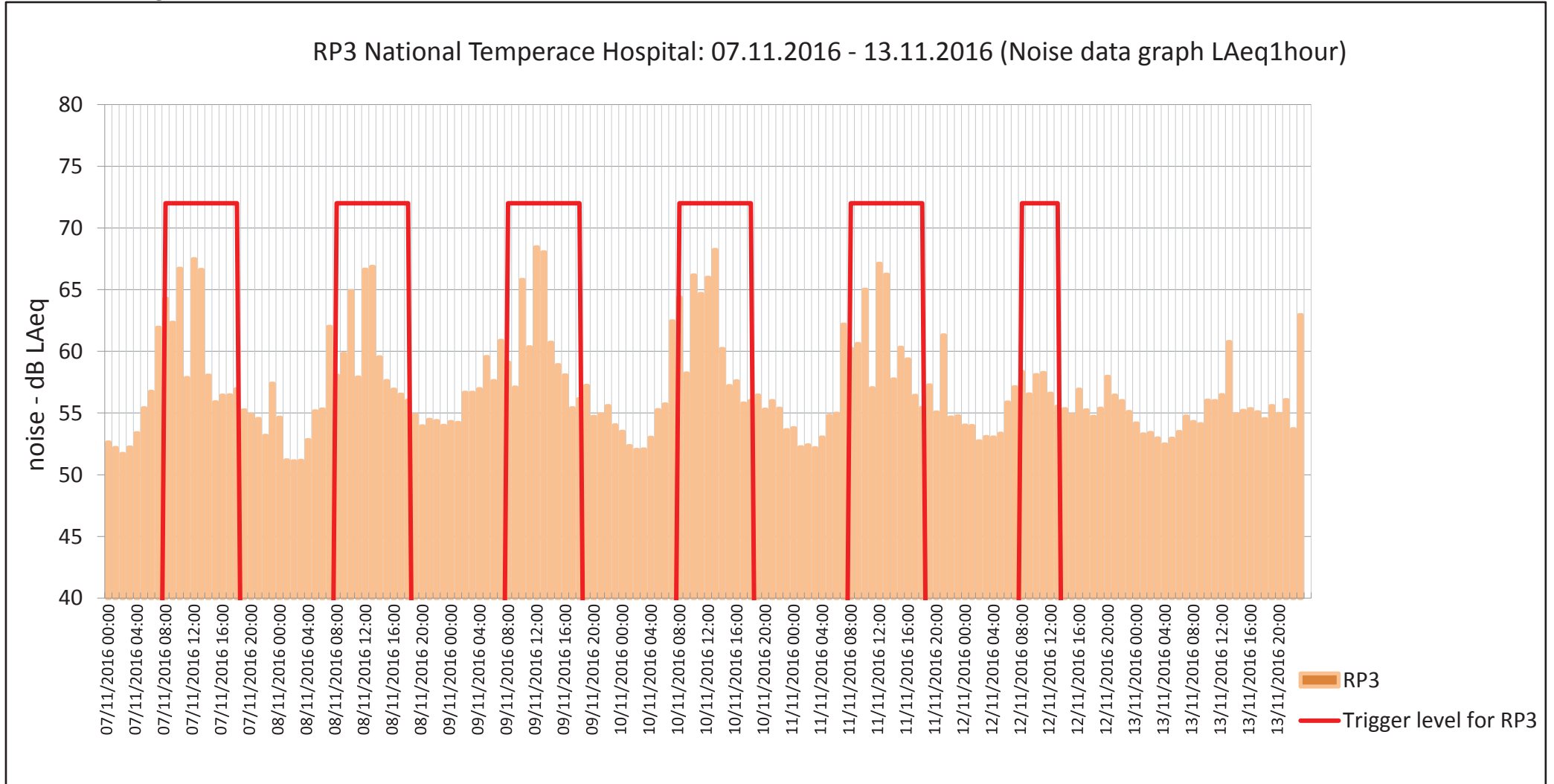
5.0 Measurement Results  
RP3 Week ending 06/11/16



RP3 National Temperance Hospital: 31.10.2016 - 06.11.2016 (Noise data graph LAeq30minutes)

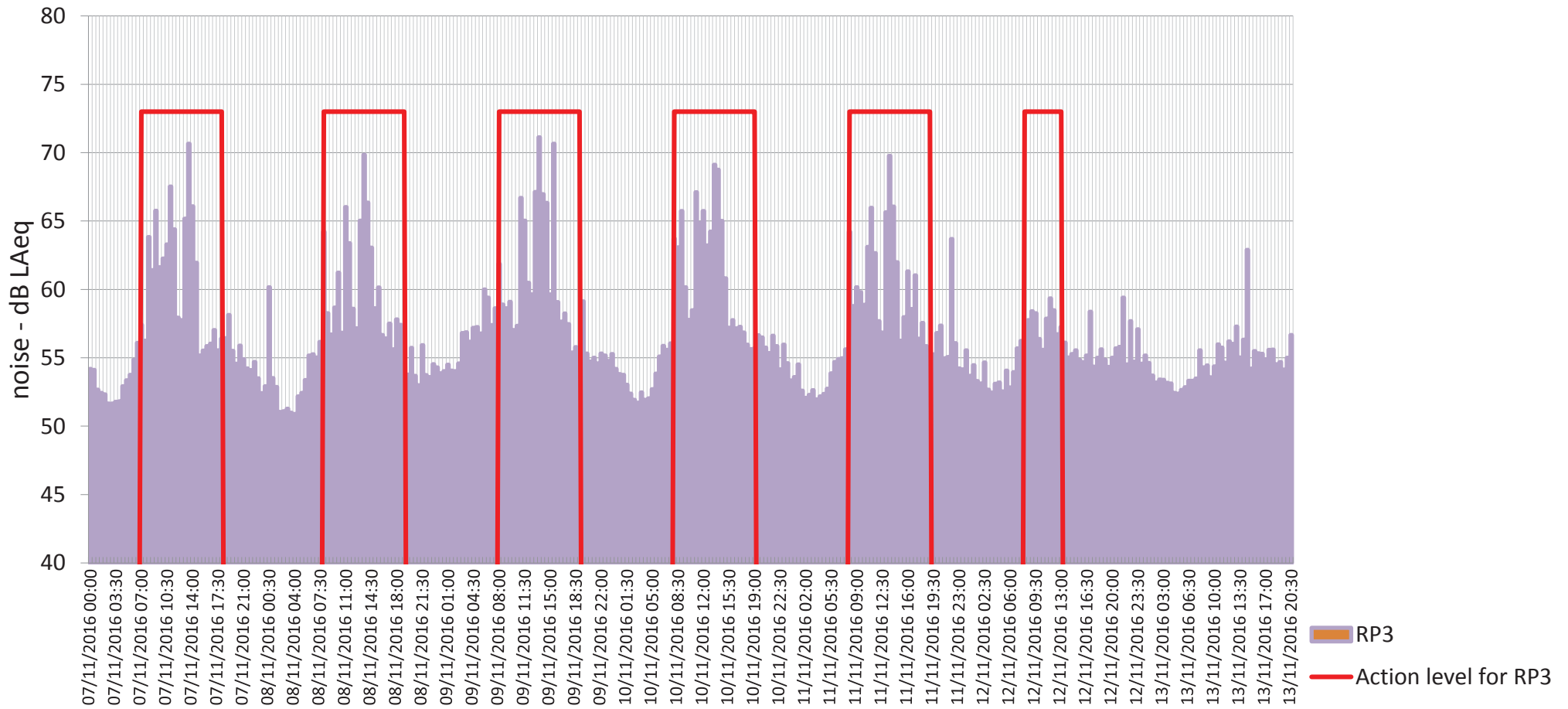


RP3 Week ending 13/11/16

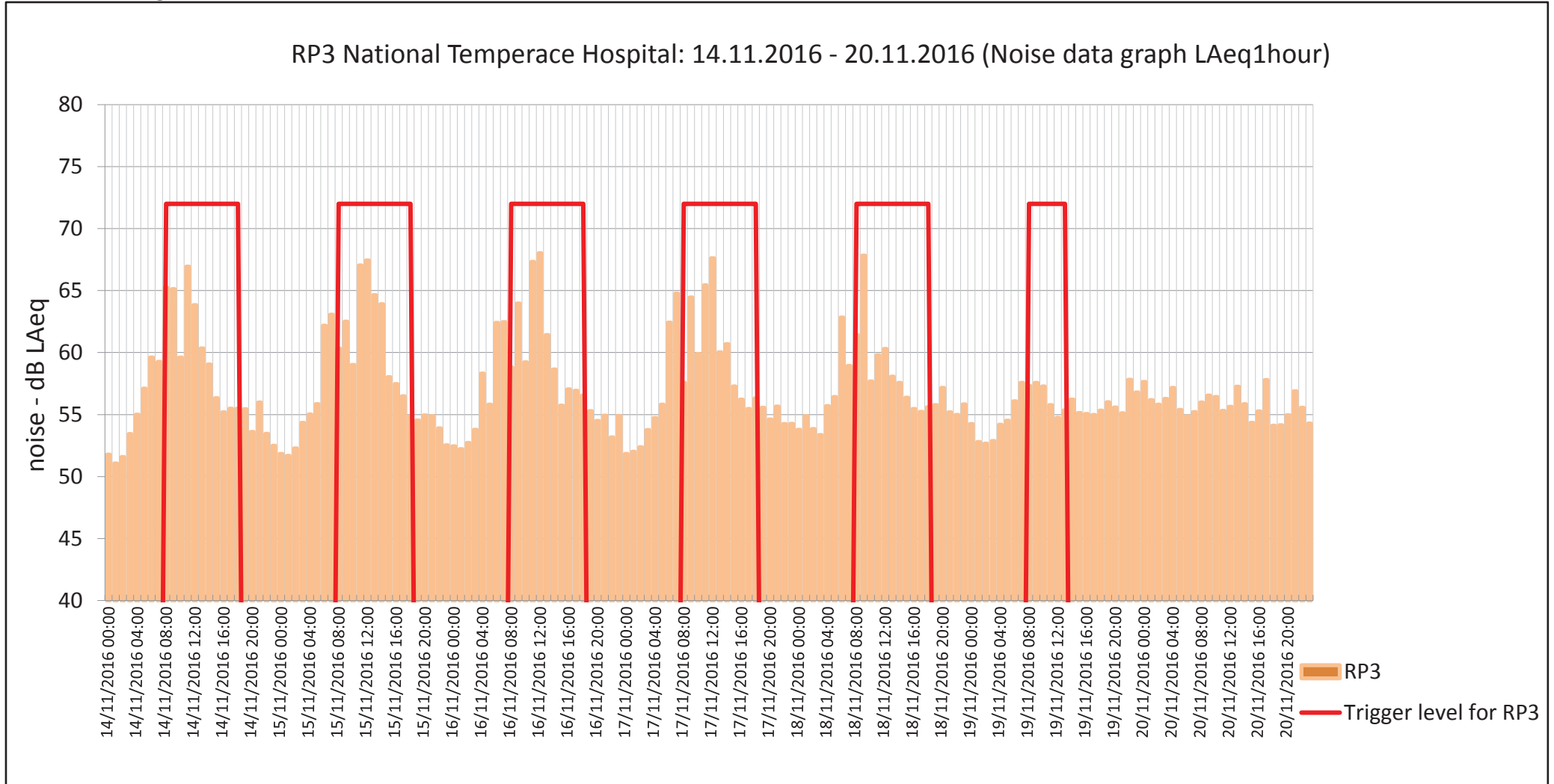




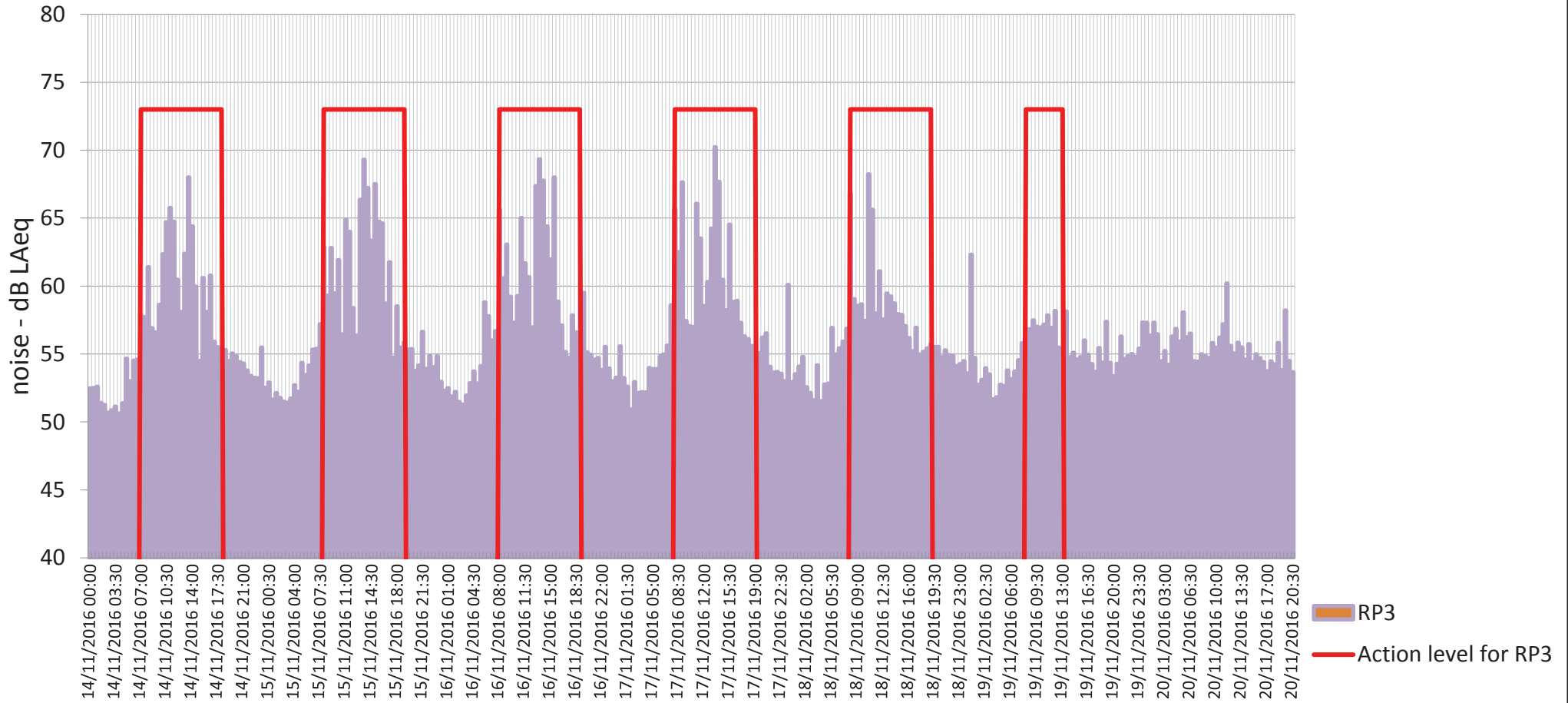
RP3 National Temperance Hospital: 07.11.2016 - 13.11.2016 (Noise data graph LAeq30minutes)



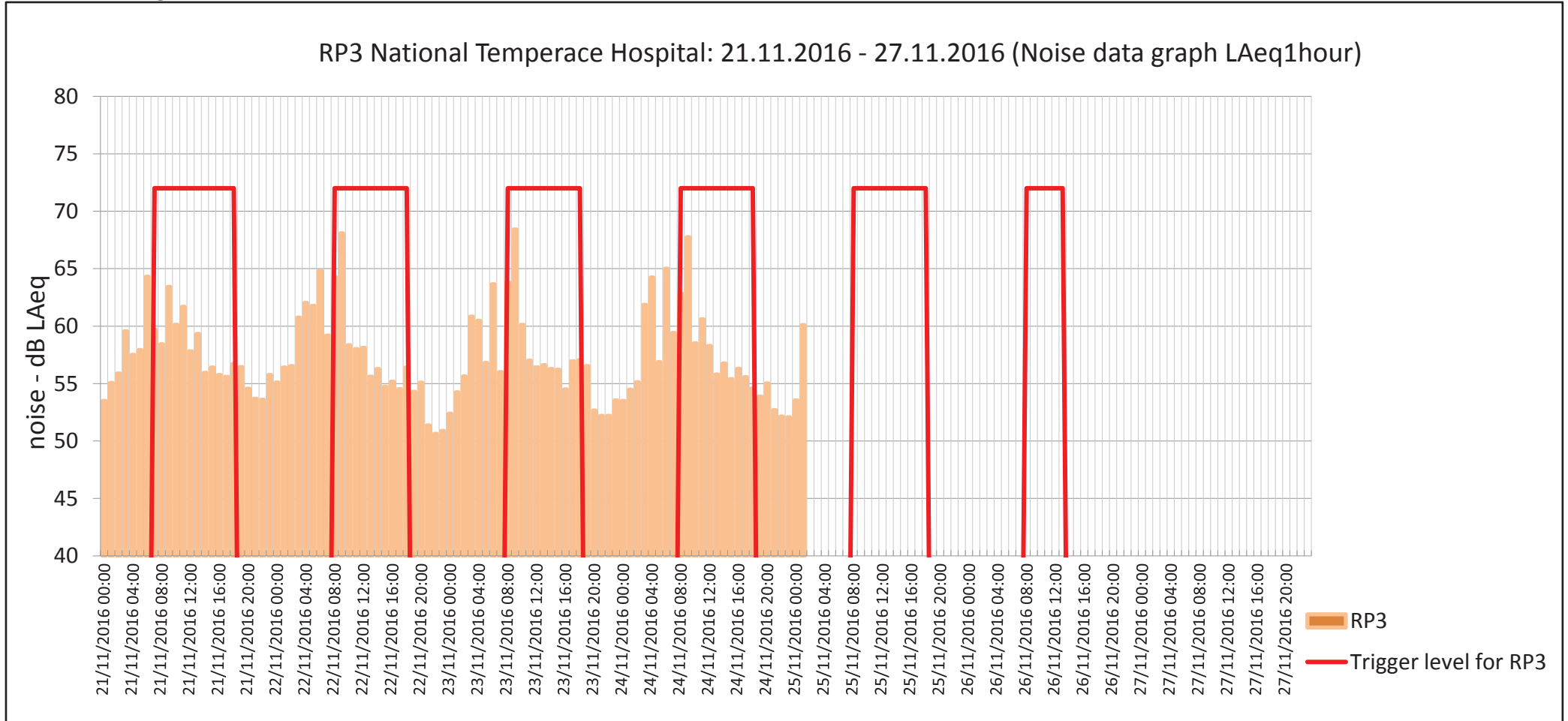
RP3 Week ending 20/11/16



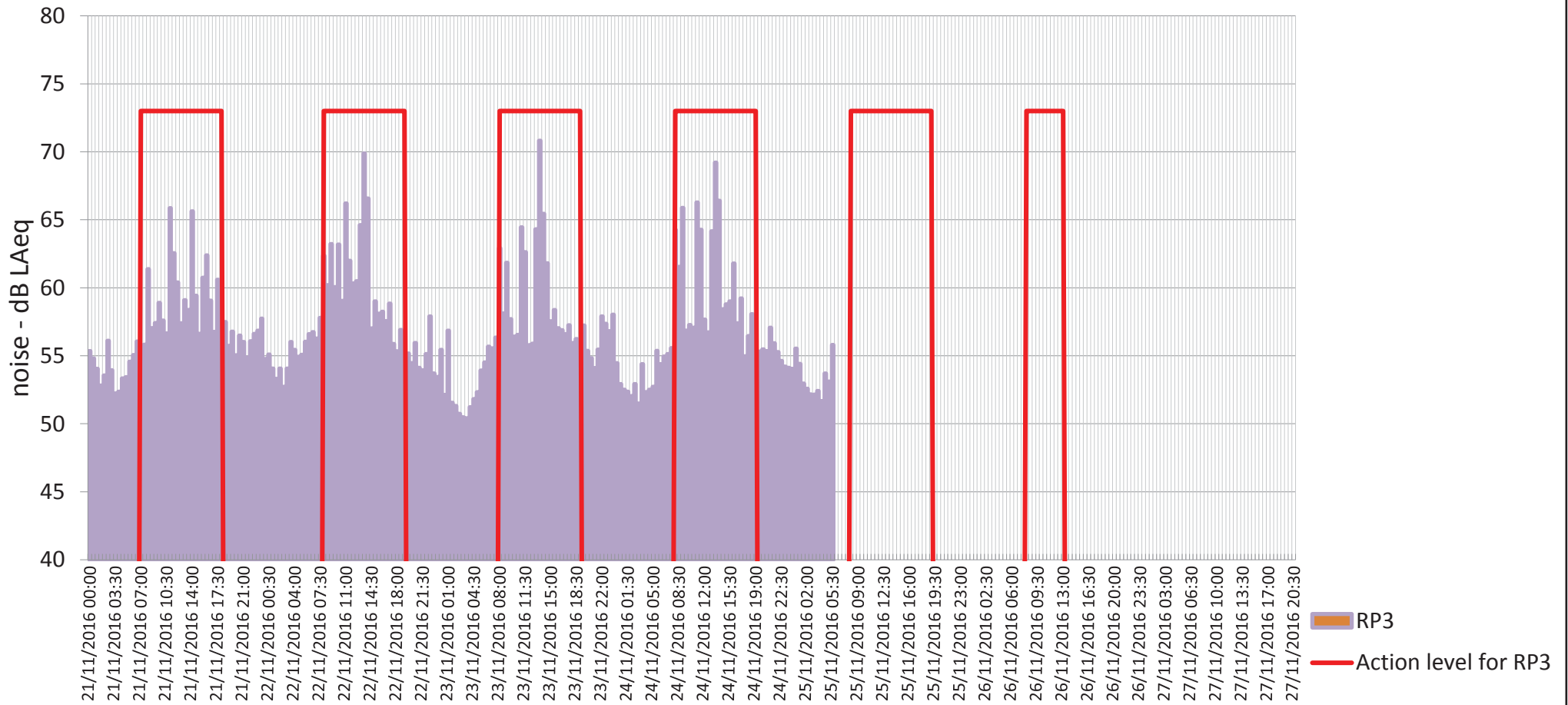
RP3 National Temperance Hospital: 14.11.2016 - 20.11.2016 (Noise data graph LAeq30minutes)



RP3 Week ending 27/11/16



RP3 National Temperance Hospital: 21.11.2016 - 25.11.2016 (Noise data graph LAeq30minutes)



## 6.0 Discussion

Unattended ambient noise monitoring has been undertaken for the pre-demolition commencement and enabling activities for the National Temperance Hospital at RP3.

The activities in this period from 31 October 2016 to 25 November 2016 include: pumping water from basement levels, internal scaffold, external scaffold, asbestos removal, soft strip, external hoarding, secondary window installation to Maria Fidelis School and roof strip.

The unattended and recorded measured noise levels are presented graphically in this report. There were no exceedances of the 73dBLAeq 0.5hour action level

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; 6.2; 6.3 and 6.4:

dBLAeq10hours						dBLAeq5hours
Date	31/10/2016	01/11/2016	02/11/2016	03/11/2016	04/11/2016	05/11/16
RP3	62.71	61.86	63.54	63.51	62.54	55.68
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	55.56	55.10	56.28	55.61	55.45	54.38
6 - 7 PM	55.38	54.73	55.13	56.81	56.37	

**Table 6.1**

dBLAeq10hours						dBLAeq5hours
Date	07/11/2016	08/11/2016	09/11/2016	10/11/2016	11/11/2016	12/11/16
RP3	63.58	62.61	63.66	63.96	62.86	57.72
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	56.95	55.78	58.11	55.90	55.76	56.03
6 - 7 PM	56.47	57.64	55.65	55.86	56.83	

**Table 6.2**

dBLAeq10hours						dBLAeq5hours
Date	14/11/2016	15/11/2016	16/11/2016	17/11/2016	18/11/2016	19/11/16
RP3	62.69	63.73	63.34	63.17	61.55	57.23
Action Level	63	63	63	63	63	63
dBLAeq1hour						
7 - 8 AM	57.16	56.01	56.31	57.23	56.91	55.02
6 - 7 PM	55.79	57.56	57.71	55.98	55.49	

**Table 6.3**

dBLAeq10hours						dBLAeq5hours
Date	21/11/2016	22/11/2016	23/11/2016	24/11/2016	25/11/2016	26/11/16
RP3	60.81	62.81	62.27	62.81	-	-
Action Level	63	63	63	63	63	63

dBLAeq1hour						
7 - 8 AM	55.88	57.14	56.01	55.46	-	-
6 - 7 PM	57.12	56.23	56.14	57.38	-	-

**Table 6.4**

From Tables 6.1 to 6.4 the daily LAeq10hour in this period exceeded 63dB but by less than 1dB on several days. These increases over the 63dBLAeq10hour action level can be attributed to the noise generated during the school play times in the morning break and at lunch time, which overall last about 1.5 hours in total. The measured levels record an increase in the underlying ambient noise, LAeq, of c10dB over this 1.5 hours. Removing this playground noise from the measured LAeq10hour reduces the measured LAeq10hour by c3dB.

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

[www.gov.uk/hs2](http://www.gov.uk/hs2)