



# **A Noise Study as part of the Dalymount Park Stadium redevelopment on behalf of DCC in accordance with a noise survey requirements specification.**

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**Prepared by:**

**Diarmuid Keaney, ICAN Acoustics.**

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**Signature:**

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Diarmuid Keaney MIOA  
M.Sc. in Applied Acoustics,  
Diploma in Acoustics and Noise Control  
BE from the National University of Ireland.  
ICAN Acoustics,  
Email: [diarmuid@acoustics.ie](mailto:diarmuid@acoustics.ie)  
Tel: 01-4403869, 091-588555.  
[www.acoustics.ie](http://www.acoustics.ie)

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# 1 INTRODUCTION

## 1.1 Project Introduction

Dublin City Council has engaged ICAN Acoustics to carry out a comprehensive noise study within the vicinity of Dalymount Park, Phibsborough, Dublin. Our study follows a specific noise survey requirements specification dated the 22<sup>nd</sup>/9/2021 prepared by Gilroy McMahon Architects. The project lead on behalf of the architectural firm was Viral Bhavsar. Regular communication and correspondence were kept right throughout the measurement periods. One of the survey's main purposes was to establish ambient noise levels on a common day (non-matchday) and during a matchday event. Also, as part of the survey, several specific noise measurement parameters were to be gathered and obtained, all to be observed over a minimum of 30 minutes at each noise measurement location. Figure 1 below shows a general overview of the site and location, showing Dalymount Stadium and the nearby residential properties and surrounding roads. Later in this report, we will specifically detail each measurement location and report the measured levels during a 'common day' as well as during a 'match day event'.



Figure 1: 3D Aerial View of Dalymount park (Source: Google maps, imagery 2021).

Dalymount Park is located in a typical urban environment, and the site is bounded on two sides by two busy roads. The heavily trafficked R147 runs from east to west on the southern side of Dalymount Park. On the eastern side of Dalymount Park, the Phibsborough Road (R108) runs from north to south and is also a heavily trafficked route. On the northern side of Dalymount Park, Connacht Street runs from east to west and is a busy route but not comparable and insignificant relative to the R108 and R147. On the western side of Dalymount Park is St Peters Road, which is a residential road and provides access to Dalymount Park's Car Park and St Peters National School.

## **1.2 About the author of this report**

Diarmuid Keaney works as a noise and vibration consultant for ICAN Acoustics which originally commenced trading in 1998. ICAN Acoustics has various clients ranging from state authorities and national power companies to industrial and private clients. Diarmuid holds a Master's of Science in Applied acoustics awarded by Derby University, a Diploma in Acoustics in Noise Control and a BE Honours Degree from the National University of Ireland. Diarmuid was awarded a distinction on completing his M.Sc. in Applied Acoustics and was graded an (A-) for his independent study project. He is a full member (and Chairperson) of the Association of Acoustic Consultants of Ireland, UK's Institute of Acoustics (Committee Member of the Irish Branch of the IoA), the Acoustical Society of America and the Institute of Sound and Communication Engineers. Diarmuid is also the President of the European Acoustics Association in the Republic of Ireland since December 2020. old measurement work was carried out by Diarmuid Keaney of ICAN Acoustics.

## 2 Measurement Equipment

The following noise measurement instrumentation was used in the baseline noise survey, and calibration certification for equipment used has been provided in Appendix A.

### 2.1 *NTi Audio XL2 Sound Level Meter (SLM1)*

Sound Level Meter, NTi Audio, Serial No: A2A-10976-E0

Calibration Certificate Dated: 20<sup>th</sup> October 2021 (2-year calibration)

Type 1 instrument.

Calibration certification has been provided in Appendix A of this report.

### 2.2 *NTi Audio XL2 Sound Level Meter (SLM2)*

Sound Level Meter, NTi Audio, Serial No: A2A-16940-E0

Calibration Certificate Dated: 14<sup>th</sup> August 2020 (2-year calibration)

Type 1 instrument.

Calibration certification has been provided in Appendix A of this report.

### 2.3 *NTi Audio XL2 Sound Level Meter (SLM3)*

Sound Level Meter, NTi Audio, Serial No: A2A-10298-E0

Calibration Certificate Dated: 20<sup>th</sup> October 2021 (2-year calibration)

Type 1 instrument.

Calibration certification has been provided in Appendix A of this report.

### 2.4 *NTi Audio XL2 Sound Level Meter (SLM4)*

Sound Level Meter, NTi Audio, Serial No: A2A-11106-E0

Calibration Certificate Dated: 29<sup>th</sup> October 2021 (2-year calibration)

Type 1 instrument.

Calibration certification has been provided in Appendix A of this report.

### 2.5 *Field Calibration (CAL1)*

Using the Type 4231 Sound Level Calibrator, which produces a sound level of 93.8dB re.2x10<sup>-5</sup> Pa, at a frequency of 1 kHz. The instrumentation used was calibrated before and after use of each measurement with a recorded maximum deviation of -0.02dB

Calibrator, Bruel & Kjaer Type: 4231 with Serial No 2499109

Date of Calibration: 19<sup>th</sup> October 2021 (annual calibration)

Calibration certification has been provided in Appendix A of this report

### 3 Baseline Measurement Location Details

All measurements were carried out following the guidance provided in ISO 1996-Part1, 'Acoustics-Description, measurements and assessment of environmental noise'. Type 1/Class 1 measurement instrumentation was used throughout, and calibration certification has been provided in Appendix A of this report.

#### 3.1 Noise Monitoring Locations

Figure 2 shows the general area and locations used to gather baseline noise data for the site.

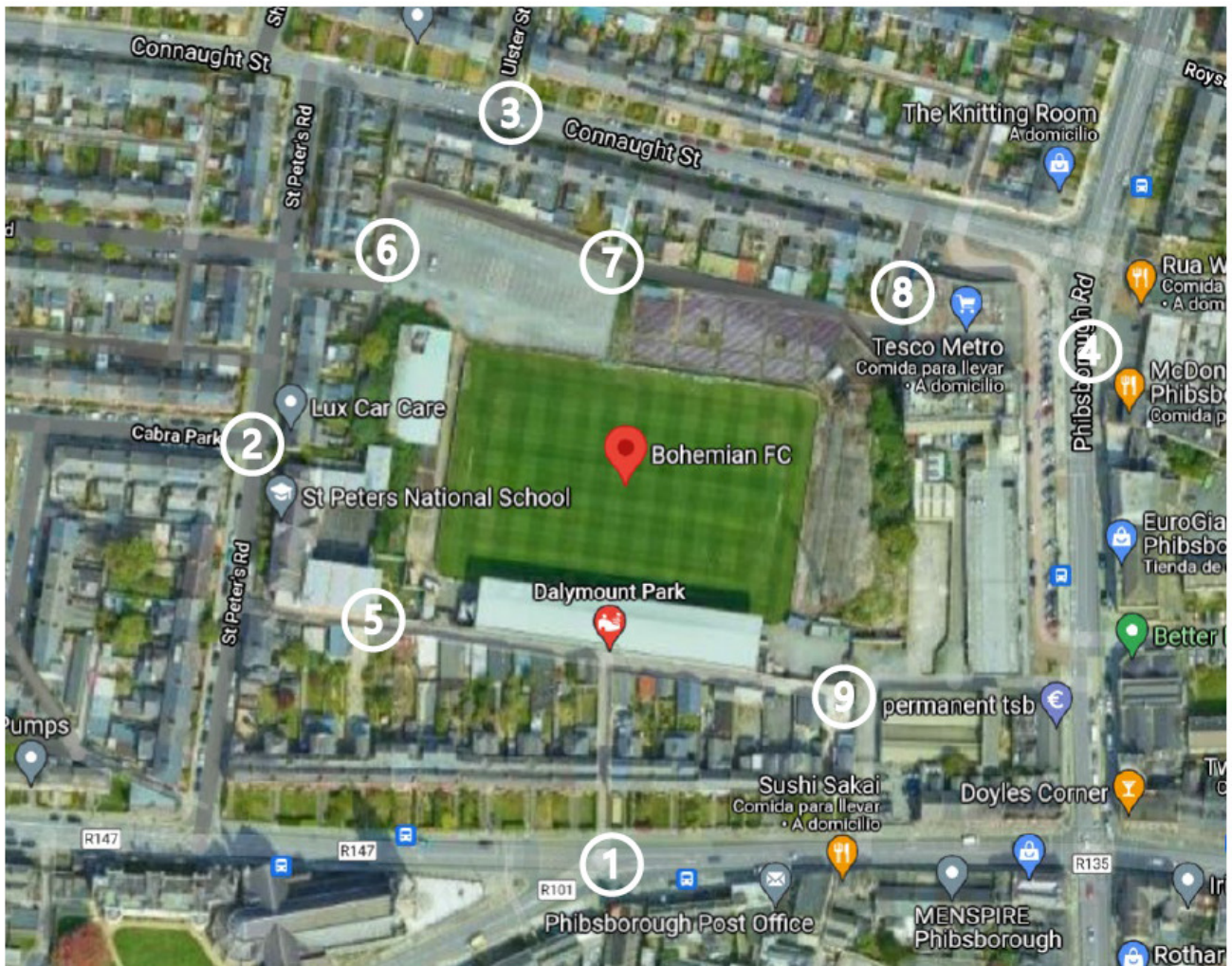


Figure 2: Noise monitoring locations shown on an aerial map of the site (Source: Google Earth).

### 3.2 Attended and Unattended Noise Monitoring Locations.

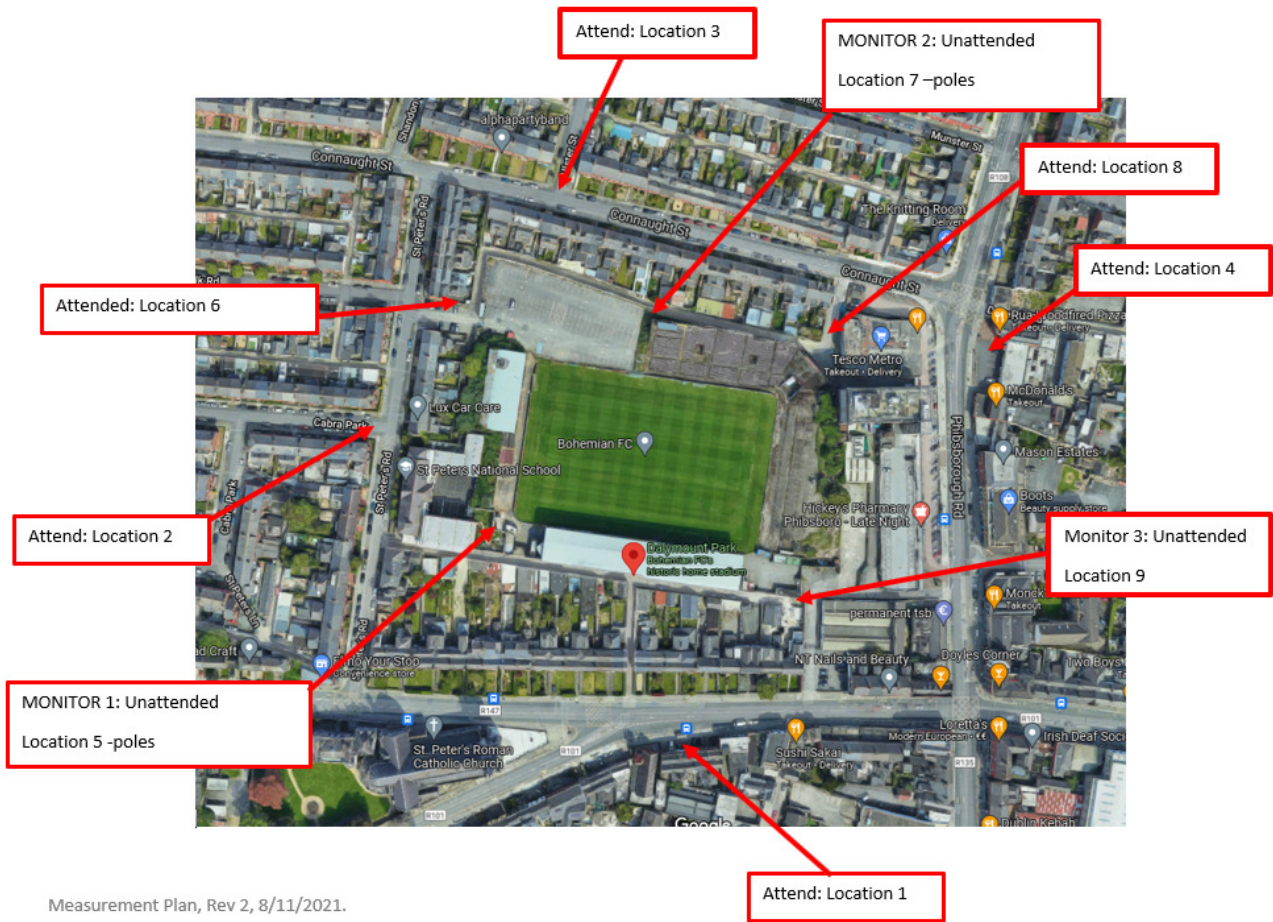


Figure 3: Details of both attended and unattended noise monitoring locations as per our Measurement Plan, Rev 2 issued 8/11/2021 (Source: Google Earth).



### 3.3 Location 1: Attended



Figure 4: Noise monitoring location used at Location1 (Source: Google Earth)

### 3.4 Location 2: Attended

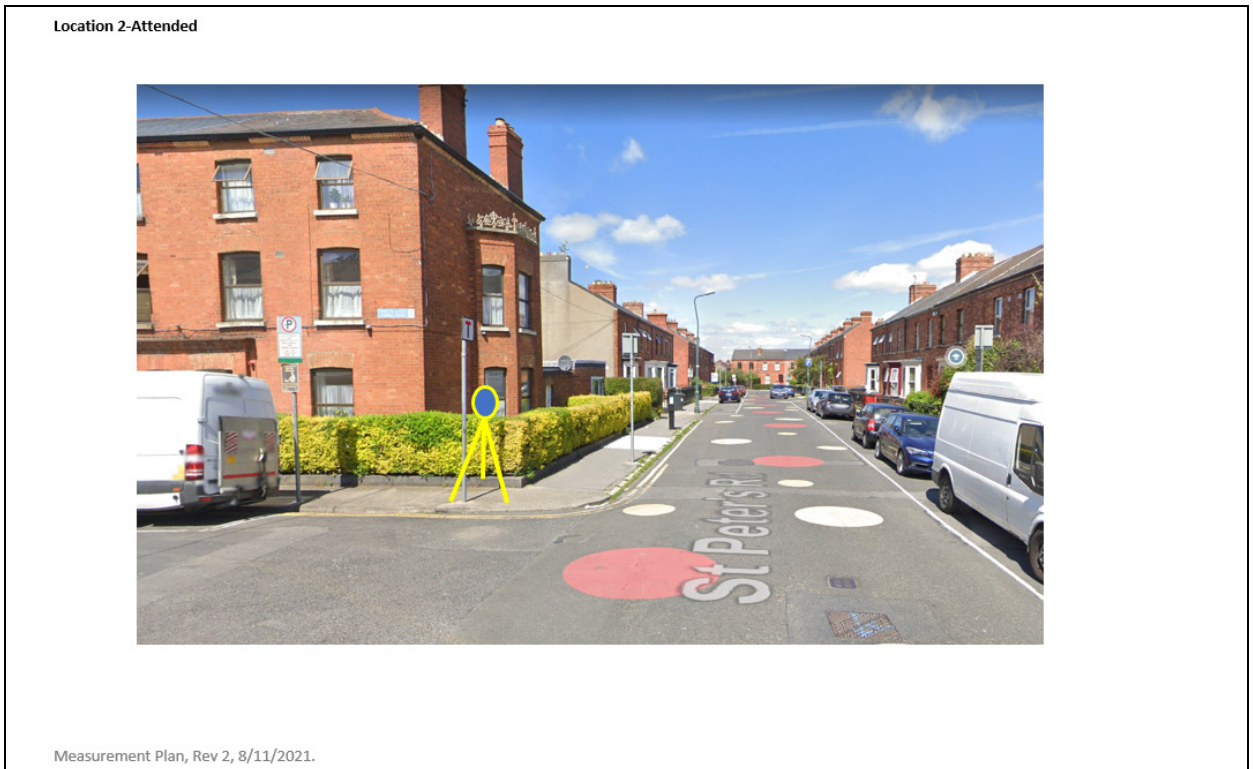


Figure 5: Noise monitoring location used at Location 2 (Source: Google Earth).

### 3.5 Location 3: Attended



Figure 6: Noise monitoring location used at Location3 (Source: Google Earth).

### 3.6 Location 4: Attended



Figure 7: Noise monitoring location used at Location 4 (Source: Google Earth)

### 3.7 Location 5: Unattended

Location 5-Unattended on telescopic poles



Measurement Plan, Rev 2, 8/11/2021.

Figure 8: Noise monitoring location used at Location 5 (Source: Google Earth).

### 3.8 Location 6: Unattended

Location 6 -Attended



Measurement Plan, Rev 2, 8/11/2021.

Figure 9: Noise monitoring location used at Location 6 (Source: Google Earth).

### 3.9 Location 7: Unattended

Location 7-Unattended on telescopic poles



Measurement Plan, Rev 2, 8/11/2021.

Figure 10: Noise monitoring location used at Location 7 (Source: Google Earth).

### 3.10 Location 8: Attended

Location 8-Attended



Measurement Plan, Rev 2, 8/11/2021.

Figure 11: Noise monitoring location used at Location 8 (Source: Google Earth).

### 3.11 Location 9: Unattended

Location 9 -Unattended (on the flat roof).



Measurement Plan, Rev 2, 8/11/2021.

Figure 12: Noise monitoring location used at Location 9 (Source: Google Earth).

## 4 Noise Survey on Matchday

Local weather measurements for this noise survey have been provided in Appendix B. In addition, the terminology and measurement parameters used have been defined in Appendix D of this report. This survey was carried out before enduring a football match between Bohemians FC and Shamrock Rovers, which commenced at 19:45hrs.

### 4.1 Measurement Results for Location 1

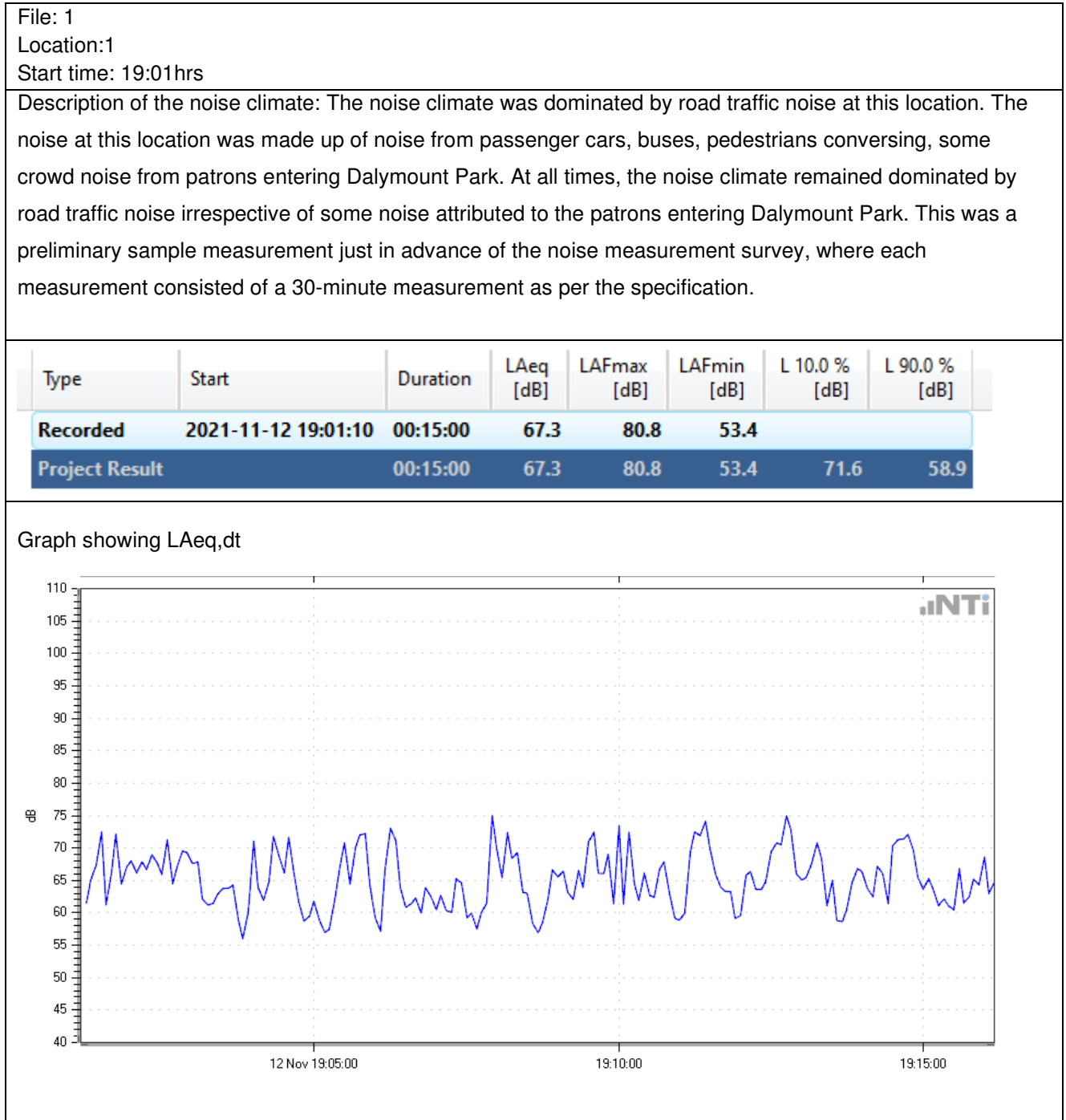


Figure 13: Preliminary measurement in advance of the game, which was not due to start until 19:45hrs.

## 4.2 Measurement Results for Location 2

File: 2

Location:2

Start time: 19:19hrs

Description of the noise climate: the noise climate was dominated by traffic noise at this location. Other noise sources included pedestrians entering the Stadium. At this location, it was also possible to hear supporters inside the Stadium, who could be heard on occasion singing collectively in advance of the match. Noise from the vocal public address system used at Dalymount Park was also audible. Between speech announcements, there was background music playing through the stadium speakers, which could be heard, and in addition to this, patrons were occasionally singing along.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-11-12 19:19:44	00:30:00	61.8	91.9	47.2		
Project Result		00:30:00	61.8	91.9	47.2	64.0	51.6

Graph showing LAeq,dt

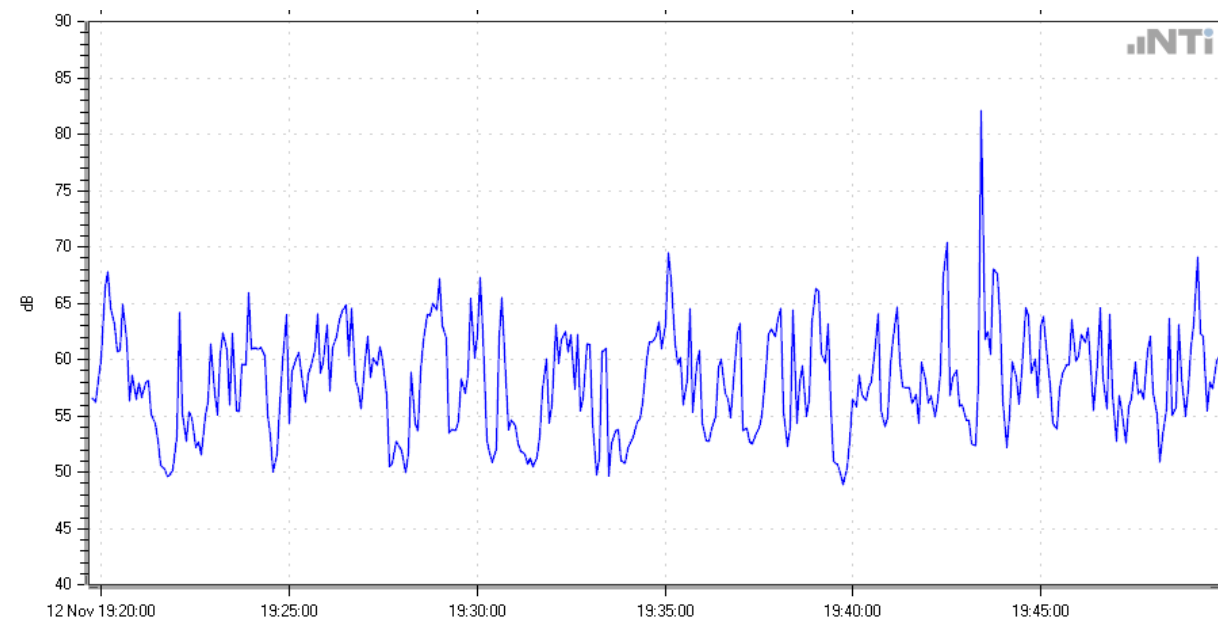


Figure 14: Measurements at Location 2 included noise from increased traffic activity and patrons in advance of the game, which was scheduled to start at 19:45hrs.

### 4.3 Measurement Results for Location 3

File: 3

Location:3

Start time: 19:52hrs

Description of the noise climate: the noise climate at this location consisted of noise from cars, motorbikes, and patrons cheering. While there were a number of sources present, traffic noise remains the dominant source of noise.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-11-12 19:52:44	00:30:00	60.2	74.4	46.1		
Project Result		00:30:00	60.2	74.4	46.1	63.5	52.7

Graph showing LAeq,dt

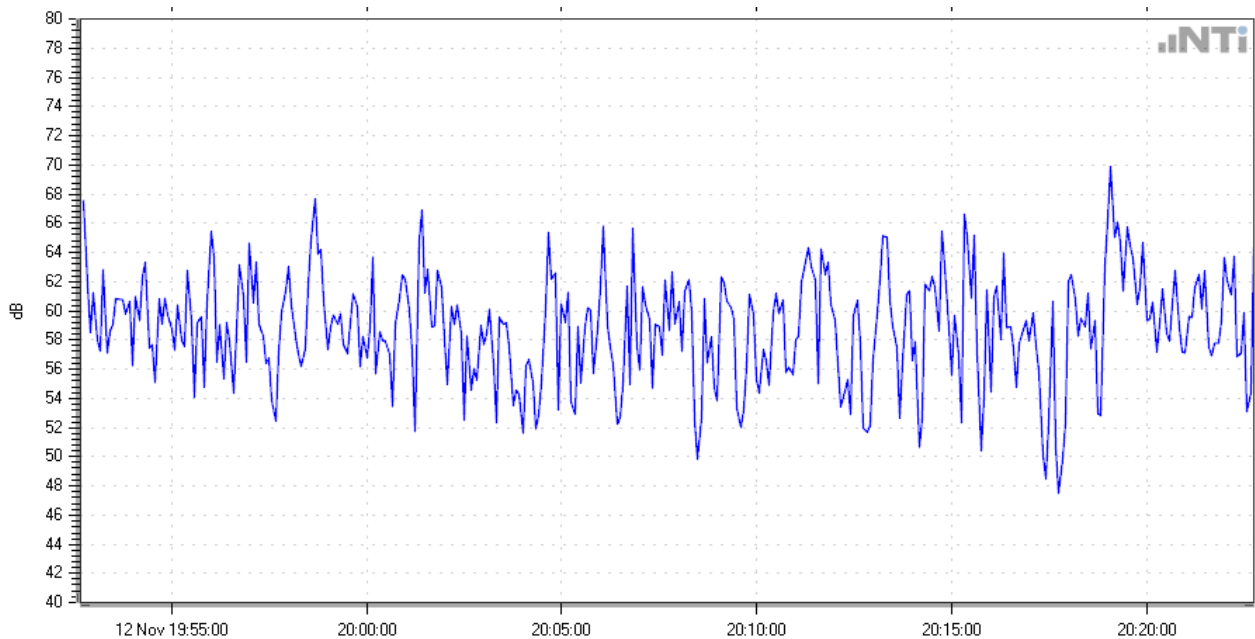


Figure 15: Measurements at Location 3, which included a contribution from the game, which commenced at 19:45hrs.



#### 4.4 Measurement Results for Location 4

File: 4  
 Location:4  
 Start time: 20:25hrs

Description of the noise climate: The noise climate at this location was dominated by road traffic noise. This is a very heavily trafficked location, and at 20:30hrs, an emergency vehicle passed with its siren in use. Other sources of noise included auditory tones from the pedestrian crossing nearby. This location is close to a busy Junction with a significant quantity of traffic and activity. Occasionally there was some noise from pedestrians conversing nearby.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-11-12 20:25:22	00:30:00	70.2	100.0	53.5		
Project Result		00:30:00	70.2	100.0	53.5	69.1	59.6

Graph showing LAeq,dt

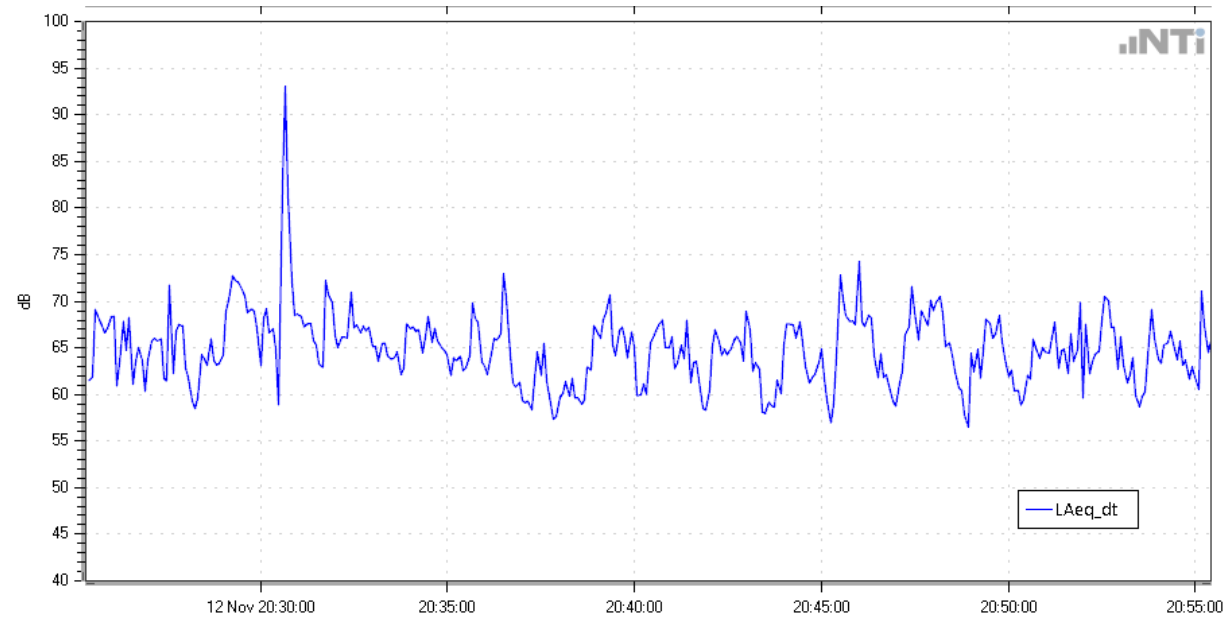


Figure 16: Measurements at Location 3, which included a contribution from the game which commenced at 19:45hrs.

#### 4.5 Measurement Results for Location 5

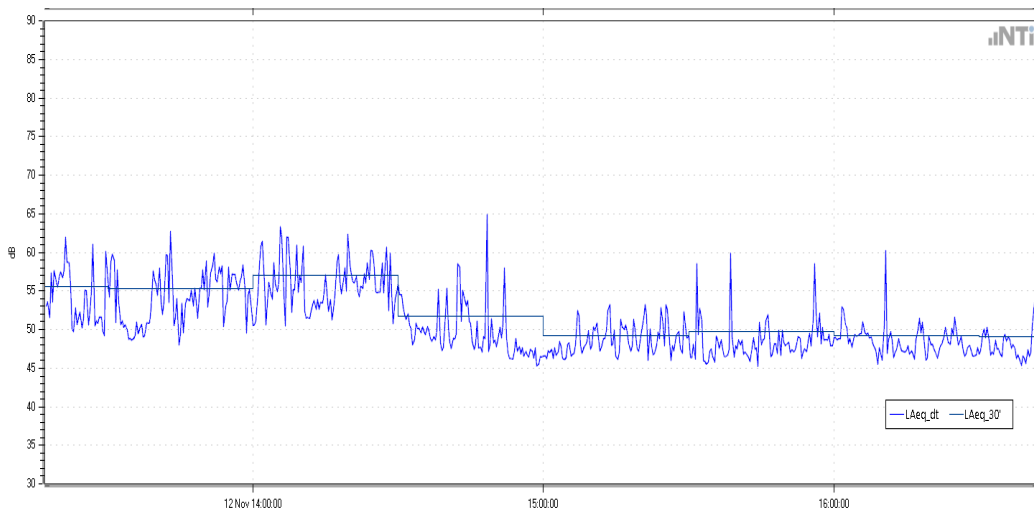
File: Logging file for Location 5

Location:4

Start time: 13:17hrs End time: 22:14hrs

Description of the noise climate: during daytime hours, the school remains the nearest dominant noise source to this noise monitoring location. There was a notable noise contribution from the school playground during break times and after school. After 14:50hrs, there was no contribution evident from the school, and the background noise climate included noise from traffic and birdsong, with noise from one helicopter passing the area. Other sources of noise included distant sounds of emergency vehicles and children playing in the general area. It was noted from approximately 18:00hrs that noise started to build inside the Stadium. This location was within reasonable proximity to some of the catering and shop units that are present then the Stadium. Staff could be heard conversing and setting up in advance of the game. At 19:04hrs, music could be heard from the stadium speakers and conversation noise from patrons that were entering into the seating. There was a steady build-up of noise from 19:00hrs to 19:45hrs, score the match commenced at 19:45hrs. Noise levels remained elevated until 21:44hrs which included supporter noise which included chanting, audible clapping, cheering, whistling, booing and singing songs. From 21:44hrs, noise levels started to decrease when the match was over and as patrons began to leave the Stadium.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	L 10.0 % [dB]	L 90.0 % [dB]	L 95.0 % [dB]
30'	2021-11-12 13:00:00	00:12:52	55.6	72.6	58.3	48.7	48.2
30'	2021-11-12 13:30:00	00:30:00	55.3	71.1	58.6	48.6	48.1
30'	2021-11-12 14:00:00	00:30:00	57.0	76.0	59.9	49.9	49.1
30'	2021-11-12 14:30:00	00:30:00	51.7	77.0	52.9	46.3	45.8
30'	2021-11-12 15:00:00	00:30:00	49.2	69.6	51.7	46.2	45.8
30'	2021-11-12 15:30:00	00:30:00	49.7	73.8	50.4	45.7	45.3
30'	2021-11-12 16:00:00	00:30:00	49.2	77.0	50.2	46.1	45.6
30'	2021-11-12 16:30:00	00:11:45	49.1	67.8	50.1	45.6	45.0



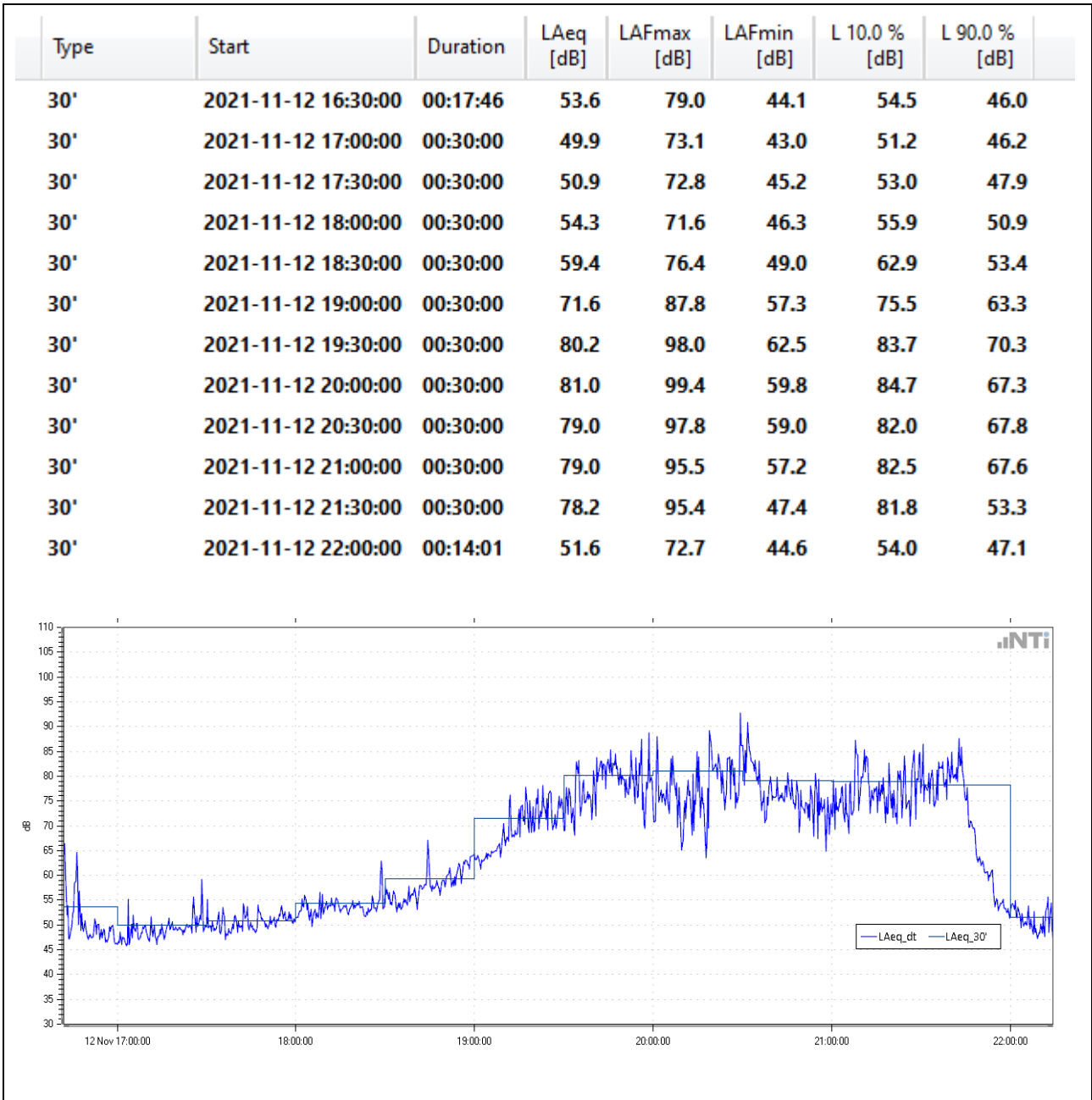


Figure 17: Measurements at Location 5 showing measured noise levels over 30 minutes observation period along with graphed time history plots

#### 4.6 Measurement Results for Location 6

File: 6

Location: 6

Start time: 21:01hrs

Description of the noise climate: At this location, close to the eastern gate to the car park, patron cheering and support could be heard. Other noise sources included noise from the metal gates being opened and closed. There was some light traffic on the road nearby. A significant noise source at this location included noise from a petrol generator which was in use close to a temporary hot dog stand that was set up just inside the car park gate. Crowd cheering was consistent, and there was some noise from some patrons leaving the Stadium early. This measurement was conducted 65 minutes into the match. On a second occasion, the door was opened for Gardai entering the car park with vehicles. The metal doors gave rise to a notable bang when closed.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-11-12 21:01:36	00:30:00	60.5	78.8	49.3		
Project Result		00:30:00	60.5	78.8	49.3	64.0	52.7

Graph showing LAeq,dt

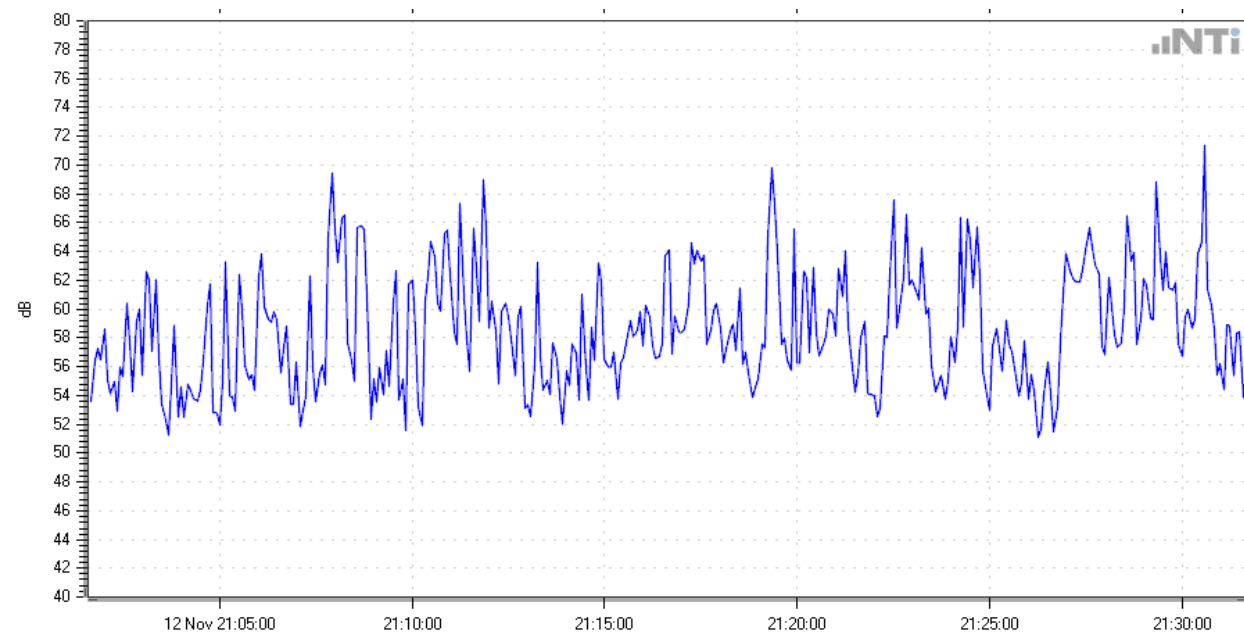


Figure 18: Measurements at Location 3, which included a contribution from the game which commenced at 19:45hrs.

## 4.7 Measurement Results for Location 7

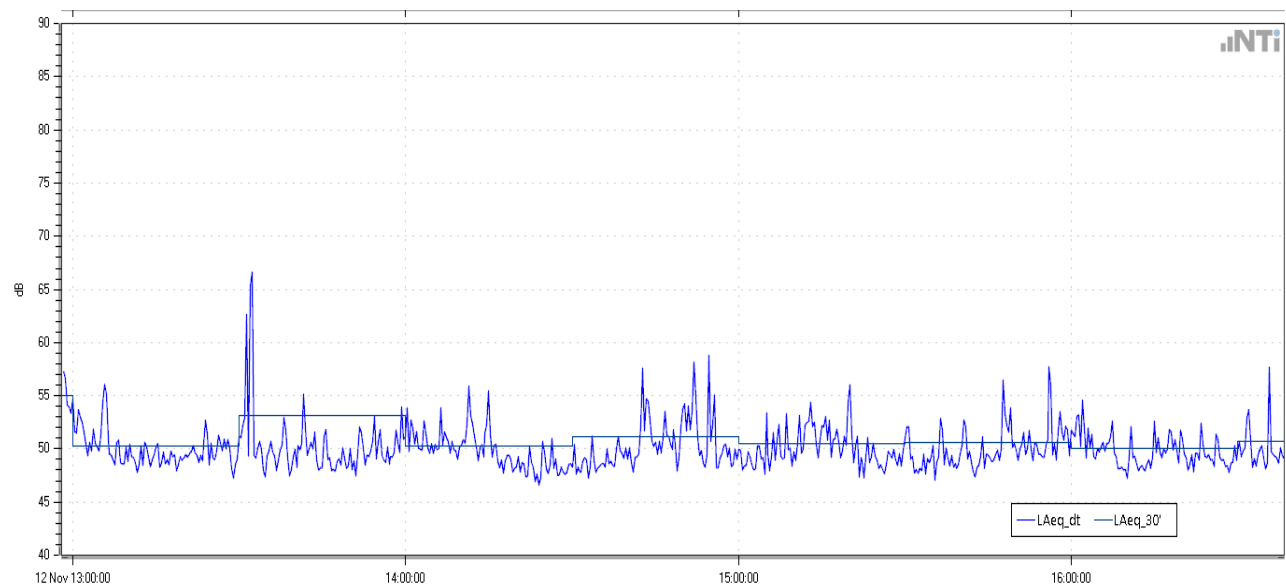
File: Logging file for Location 7

Location: 7

Start time: 12:59 hrs

Description of the noise climate: the noise climate at this location consisted mainly of distant traffic. Other occasional sources included emergency sirens, birdsong and conversational noise from users of the car park. The noise levels from this first observation period were relatively low in the order of 50~55dB(A). Noise levels remained relatively low until approximately 1800 hours when set up activities commenced at the Stadium. After that, noise levels gradually increased and reached a maximum at 19:45hrs when the game kicked off. This noise monitoring location was subject to crowd noise, music and supporters cheering similar to that witnessed at location 5. Noise levels started to sharply fall after 21:45hrs when the game has ceased.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	L 10.0 % [dB]	L 90.0 % [dB]	L 95.0 % [dB]
30'	2021-11-12 12:30:00	00:01:50	55.0	64.8	57.6	52.3	51.7
30'	2021-11-12 13:00:00	00:30:00	50.3	67.4	52.0	47.9	47.5
30'	2021-11-12 13:30:00	00:30:00	53.2	75.1	52.2	47.7	47.4
30'	2021-11-12 14:00:00	00:30:00	50.2	66.6	52.2	47.2	46.8
30'	2021-11-12 14:30:00	00:30:00	51.2	71.2	53.2	47.6	47.3
30'	2021-11-12 15:00:00	00:30:00	50.5	66.6	52.4	47.7	47.4
30'	2021-11-12 15:30:00	00:30:00	50.6	73.8	52.4	47.5	47.1
30'	2021-11-12 16:00:00	00:30:00	50.0	67.5	51.7	47.6	47.3
30'	2021-11-12 16:30:00	00:08:09	50.8	72.2	52.1	47.7	47.4



Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-11-12 16:30:00	00:21:24	51.9	68.3	45.4	53.7	47.5
30'	2021-11-12 17:00:00	00:30:00	50.4	71.1	44.4	52.2	47.6
30'	2021-11-12 17:30:00	00:30:00	52.0	67.6	46.6	54.4	48.8
30'	2021-11-12 18:00:00	00:30:00	56.6	72.9	46.9	58.5	51.9
30'	2021-11-12 18:30:00	00:30:00	58.5	76.3	52.3	61.0	55.0
30'	2021-11-12 19:00:00	00:30:00	68.3	82.9	55.5	72.2	60.4
30'	2021-11-12 19:30:00	00:30:00	76.8	91.0	59.3	80.5	67.0
30'	2021-11-12 20:00:00	00:30:00	78.2	97.8	57.8	81.4	64.6
30'	2021-11-12 20:30:00	00:30:00	76.5	96.8	57.8	79.4	64.5
30'	2021-11-12 21:00:00	00:30:00	75.6	91.0	58.1	79.4	65.1
30'	2021-11-12 21:30:00	00:30:00	75.2	93.3	47.3	79.0	52.6
30'	2021-11-12 22:00:00	00:30:00	53.3	75.5	46.2	55.3	49.0
30'	2021-11-12 22:30:00	00:01:14	52.0	68.7	46.9	53.6	48.5

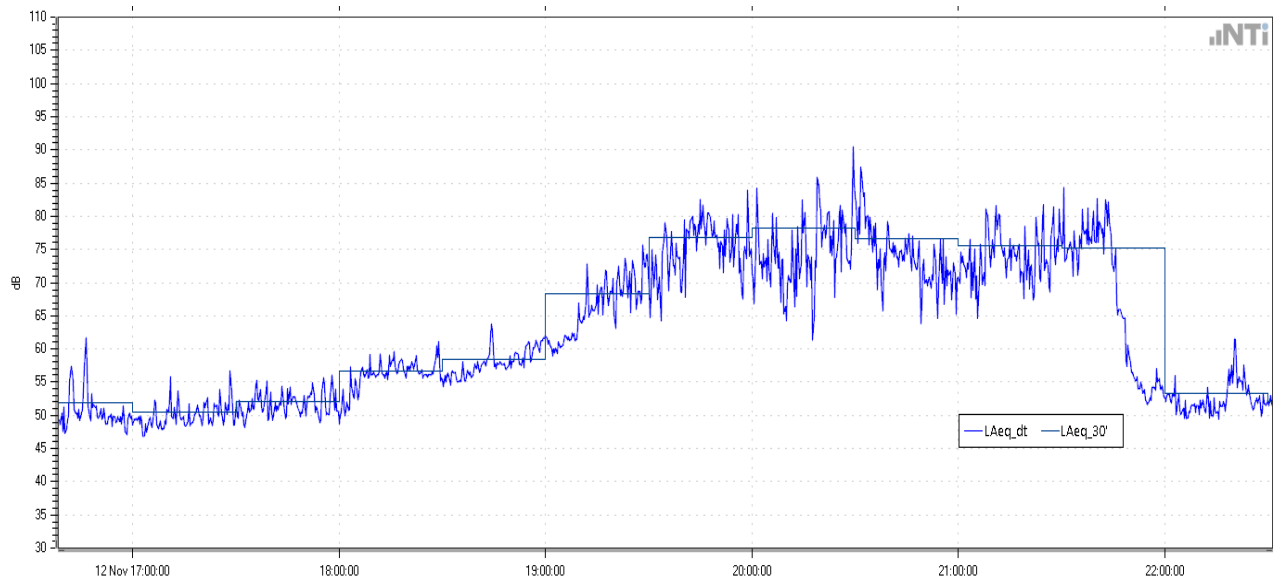


Figure 19: Measurements at Location 7

#### 4.8 Measurement Results for Location 8

File: 7  
 Location: 8  
 Start time: 21:34hrs

Description of the noise climate: the noise climate of this location included noise from the Stadium. Additionally, it was noted that there was some fan noise, possibly from a kitchen extract unit in use at Eddie Rockets nearby. At 21:40hrs, it was possible to hear the Spandau Ballet song 'Gold' played through the stadium sound system. Patron noise had fallen considerably at the latter part of this measurement. Other sources noted in the area was a car starting locally, which then departed, which may have been a patron of the Stadium using this public parking space.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-11-12 21:34:18	00:30:00	57.5	80.3	48.1		
Project Result		00:30:00	57.5	80.3	48.1	60.8	51.4

Graph showing LAeq,dt

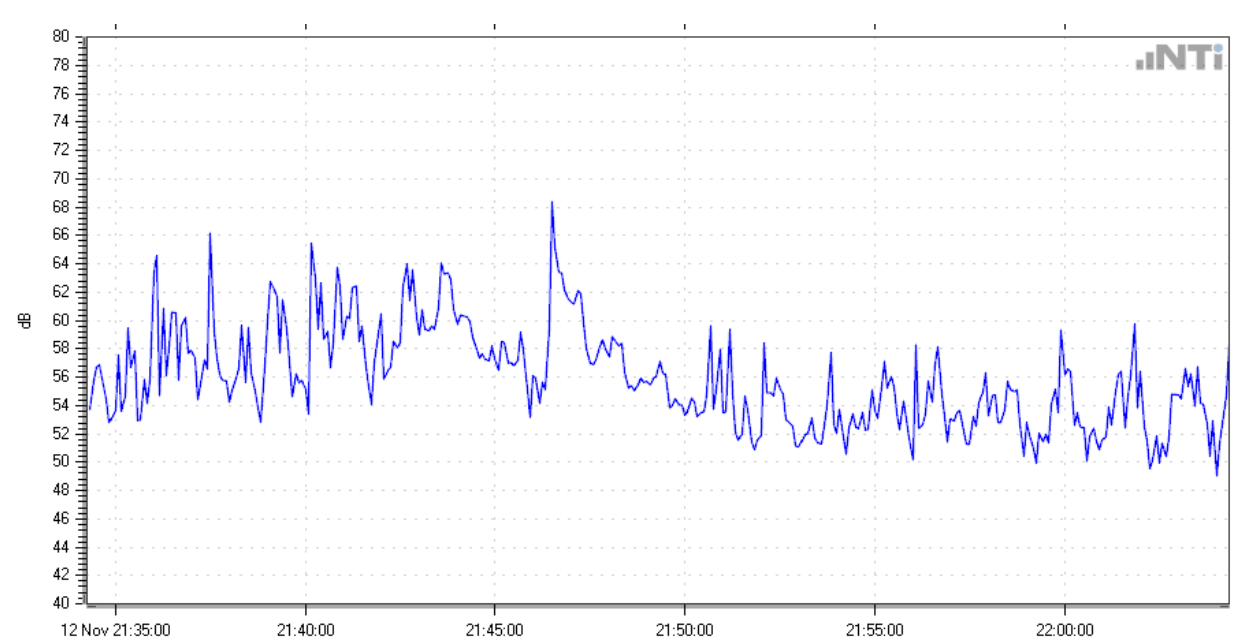


Figure 20: Measurements at Location 8

## 4.9 Measurement Location 9

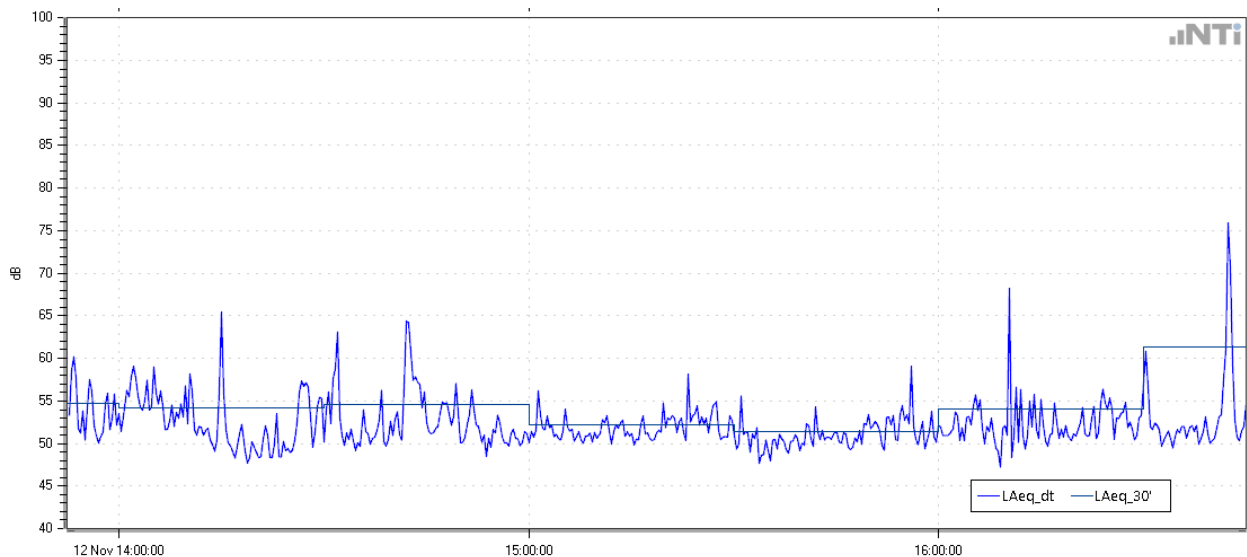
File: Logging file for Location 9

Location: 9

Start time: hrs

Description of the noise climate: the noise climate at this location mainly consisted of distant traffic throughout the daytime. Other noise sources included birdsong and occasional noise from residents conversing. Occasionally emergency vehicles could be heard in the distance as well as some light aircraft traffic. Some of the noise sources noted included the use of gates at the existing Dalymount Park stadium. Distant traffic noise remains the dominant source of noise up to 18:00hrs. From 1800 hours, there was a noticeable increase in levels as the Stadium was being prepared for the game at 19:45hrs. Noise levels started to build in the Stadium from 19:00hrs and reached a maximum at 19:45hrs which continued until the music was ceased at 21:45hrs.

Type	Start	Duration	L <sub>Aeq</sub> [dB]	L <sub>AFmax</sub> [dB]	L 10.0 % [dB]	L 90.0 % [dB]	L 95.0 % [dB]
30'	2021-11-12 13:30:00	00:07:38	54.7	78.8	57.3	49.6	49.3
30'	2021-11-12 14:00:00	00:30:00	54.2	74.9	56.8	48.4	47.8
30'	2021-11-12 14:30:00	00:30:00	54.6	77.9	56.1	49.2	48.8
30'	2021-11-12 15:00:00	00:30:00	52.1	72.2	53.7	49.5	49.1
30'	2021-11-12 15:30:00	00:30:00	51.5	71.7	53.0	48.6	48.1
30'	2021-11-12 16:00:00	00:30:00	54.1	86.8	54.1	49.3	48.8
30'	2021-11-12 16:30:00	00:14:54	61.3	94.6	55.2	49.6	49.2





Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-11-12 16:30:00	00:12:40	53.5	69.2	46.9	56.1	49.7
30'	2021-11-12 17:00:00	00:30:00	53.0	74.9	46.2	53.7	49.0
30'	2021-11-12 17:30:00	00:30:00	52.9	77.8	46.8	53.9	49.1
30'	2021-11-12 18:00:00	00:30:00	55.9	78.5	46.9	55.7	50.1
30'	2021-11-12 18:30:00	00:30:00	57.9	78.4	48.7	59.5	51.7
30'	2021-11-12 19:00:00	00:30:00	63.4	78.9	51.0	66.0	57.7
30'	2021-11-12 19:30:00	00:30:00	68.3	82.7	52.2	72.3	58.9
30'	2021-11-12 20:00:00	00:30:00	69.2	91.7	51.5	71.5	57.3
30'	2021-11-12 20:30:00	00:30:00	69.7	89.8	51.6	73.4	57.7
30'	2021-11-12 21:00:00	00:30:00	65.4	82.2	50.8	68.7	57.5
30'	2021-11-12 21:30:00	00:30:00	66.4	83.8	48.9	70.5	53.9
30'	2021-11-12 22:00:00	00:23:38	56.0	75.3	46.5	57.4	50.7

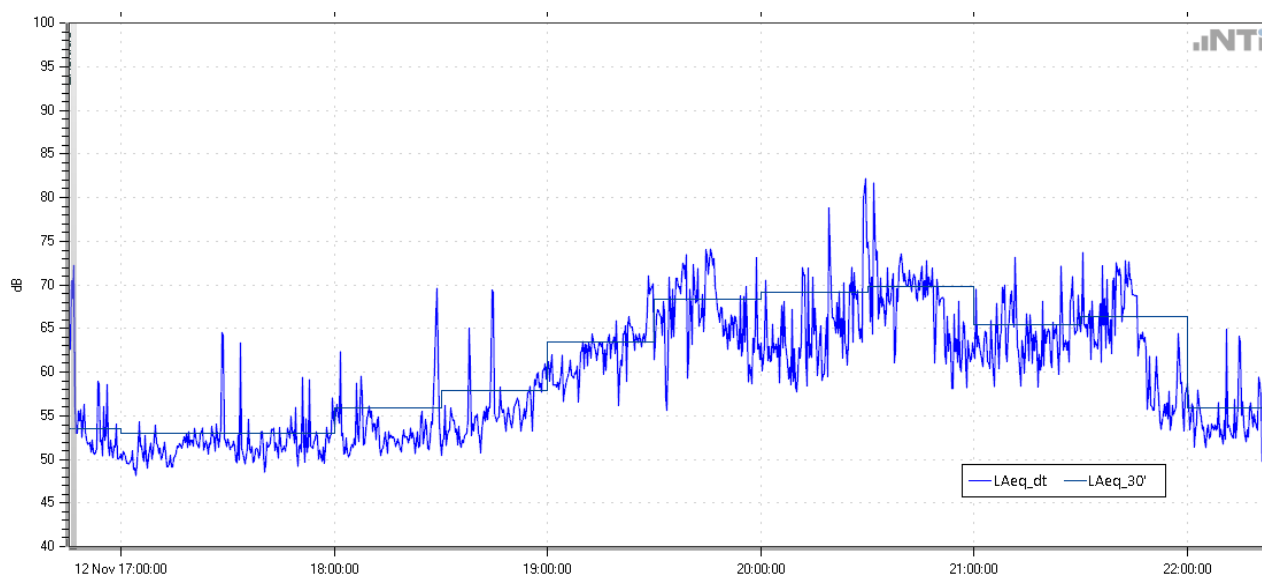


Figure 21: Measurements at Location 9

## 5 Noise Survey on Non-Matchday

### 5.1 Location 1

#### 5.1.1 Measurement Results for Daytime Location 1

File: 4  
 Location:1  
 Start time: 14:36hrs

Description of the noise climate: the noise climate at this location was dominated by road traffic noise. Other sources included noise from pedestrians passing nearby. At 14:53hrs, an emergency vehicle passed this location with its sirens sounding. This location is located at a heavily trafficked route within the vicinity of a junction.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 14:36:44</b>	<b>00:30:00</b>	<b>69.1</b>	<b>90.9</b>	<b>49.5</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>69.1</b>	<b>90.9</b>	<b>49.5</b>	<b>72.3</b>	<b>58.3</b>

Graph showing LAeq,dt

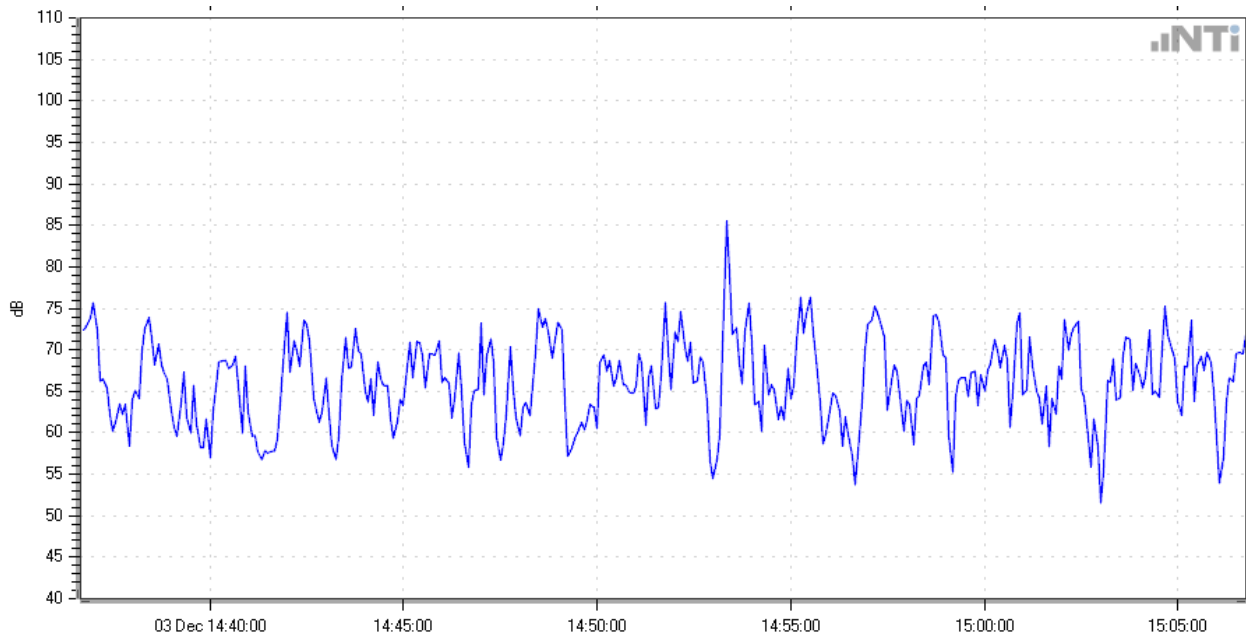


Figure 22: Measurements at Location 1 Daytime

File: 11  
 Location:1  
 Start time: 19:11hrs

Description of the noise climate: The noise climate at this location was dominated by road traffic noise. Other sources included noise from pedestrians passing nearby. There were several noisy vehicles which included buses and HGVs. This location remained a busy junction location. Other sources included noise from pedestrians who were passing nearby.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 19:10:44</b>	<b>00:30:00</b>	<b>68.8</b>	<b>92.0</b>	<b>53.3</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>68.8</b>	<b>92.0</b>	<b>53.3</b>	<b>72.6</b>	<b>58.8</b>

Graph showing LAeq,dt

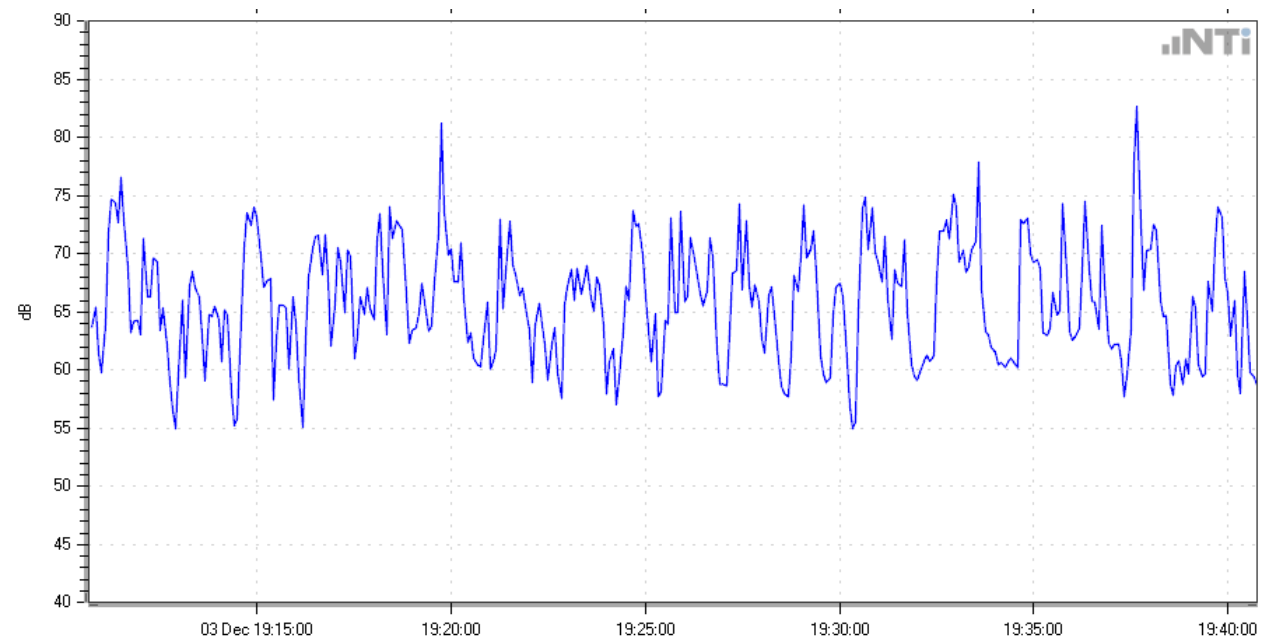


Figure 23: Measurements at Location 1 Daytime

### 5.1.2 Measurement Results for Evening Location 1

File: 17  
 Location:1  
 Start time: 22:38hrs

Description of the noise climate: The noise climate at this location was dominated by road traffic noise. Other sources included noise from pedestrians passing nearby. The church bells rang at 23:00hrs. Road traffic still remained the dominant source of noise at this location

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 22:38:00</b>	<b>00:30:00</b>	<b>68.6</b>	<b>84.1</b>	<b>45.6</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>68.6</b>	<b>84.1</b>	<b>45.6</b>	<b>72.3</b>	<b>56.2</b>

Graph showing LAeq,dt

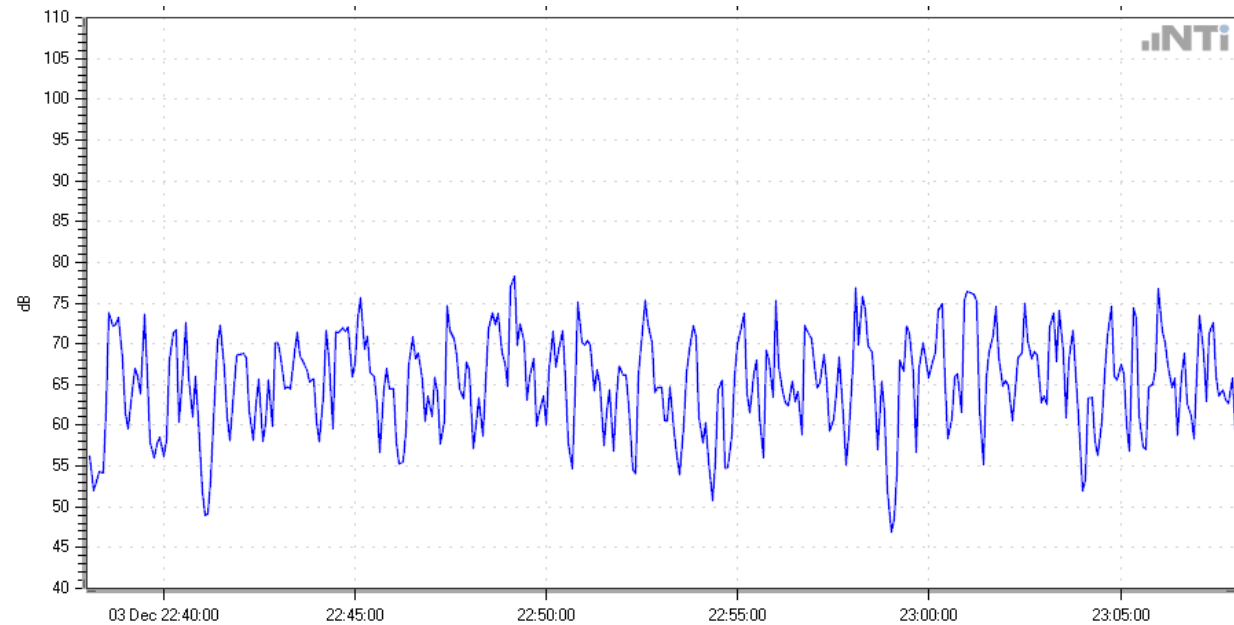


Figure 24: Measurements at Location 1 Evening.

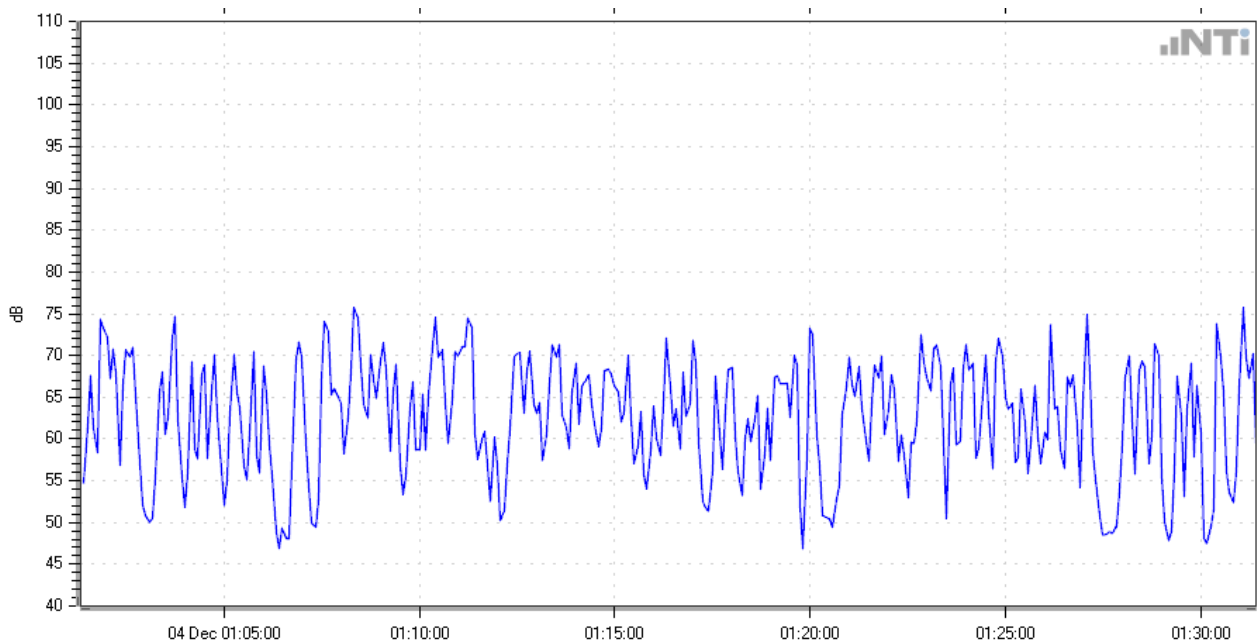
### 5.1.3 Measurement Results for Night-time Location 1

File: 21  
 Location:1  
 Start time: 01:01 hrs

Description of the noise climate: Road traffic noise remains the dominant source of noise at the location. While traffic had fallen since the daytime and evening period, it still remains the dominant source of noise at this location. Other sources included noise from the auditory warning in use at the pedestrian crossing. A number of pedestrians passed by this location, and one noise source included somebody using a skateboard passing nearby.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 01:01:22</b>	<b>00:30:00</b>	<b>66.6</b>	<b>79.8</b>	<b>45.4</b>		
⊕ <b>-Overload (1)</b>		<b>00:00:01</b>	<b>68.0</b>	<b>69.5</b>	<b>66.1</b>	<b>68.0</b>	<b>68.0</b>
<b>Project Result</b>		<b>00:30:00</b>	<b>66.6</b>	<b>79.8</b>	<b>45.4</b>	<b>71.0</b>	<b>51.4</b>

Graph showing LAeq,dt



. Figure 25: Measurements at Location 1 Night-Time.

File: 27  
 Location: 1  
 Start time: 04:22hrs

Description of the noise climate: at this time traffic had fallen very considerably and there were gaps between traffic. While traffic was infrequent, it remained the dominant source of noise at this location. The pedestrian crossing auditory warning was clearly audible at this location.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 04:22:22</b>	<b>00:30:00</b>	<b>62.9</b>	<b>80.4</b>	<b>42.7</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>62.9</b>	<b>80.4</b>	<b>42.7</b>	<b>66.7</b>	<b>45.5</b>

Graph showing LAeq,dt

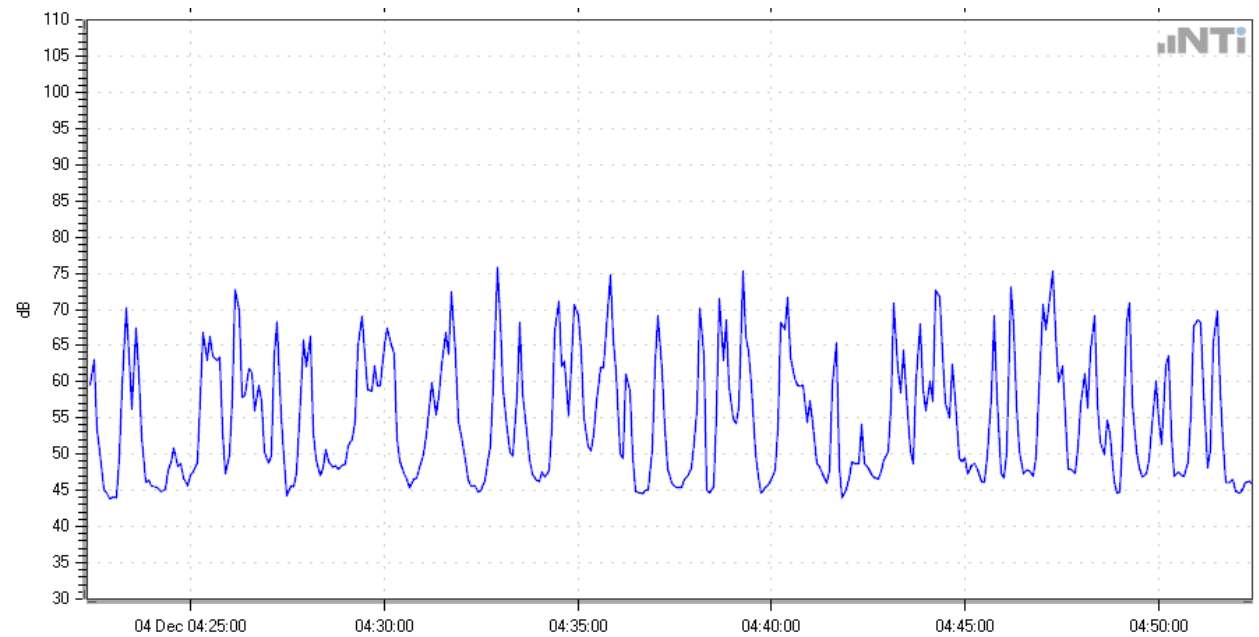


Figure 26: Measurements at Location 1 Night-Time.

## 5.2 Location 2

### 5.2.1 Measurement Results for Daytime Location 2

File: 5

Location:2

Start time: 15:13hrs

Description of the noise climate: Again, at this measurement location on Saint Peters Rd, the noise climate was dominated by road traffic noise. This location is within the vicinity of a local school and on occasion there was noise from conversing parents and children using the pedestrian streets in the area. There was a mix of vehicles on this road which included passenger cars, vans, HGVs and a motorbike. Also during this measurement, it was noted that there was some construction work taking place in a residential property nearby. It was possible on occasion to hear a hand power tool being used.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-12-03 15:13:12	00:30:00	61.5	78.2	40.8		
Project Result		00:30:00	61.5	78.2	40.8	66.0	46.2

Graph showing LAeq,dt

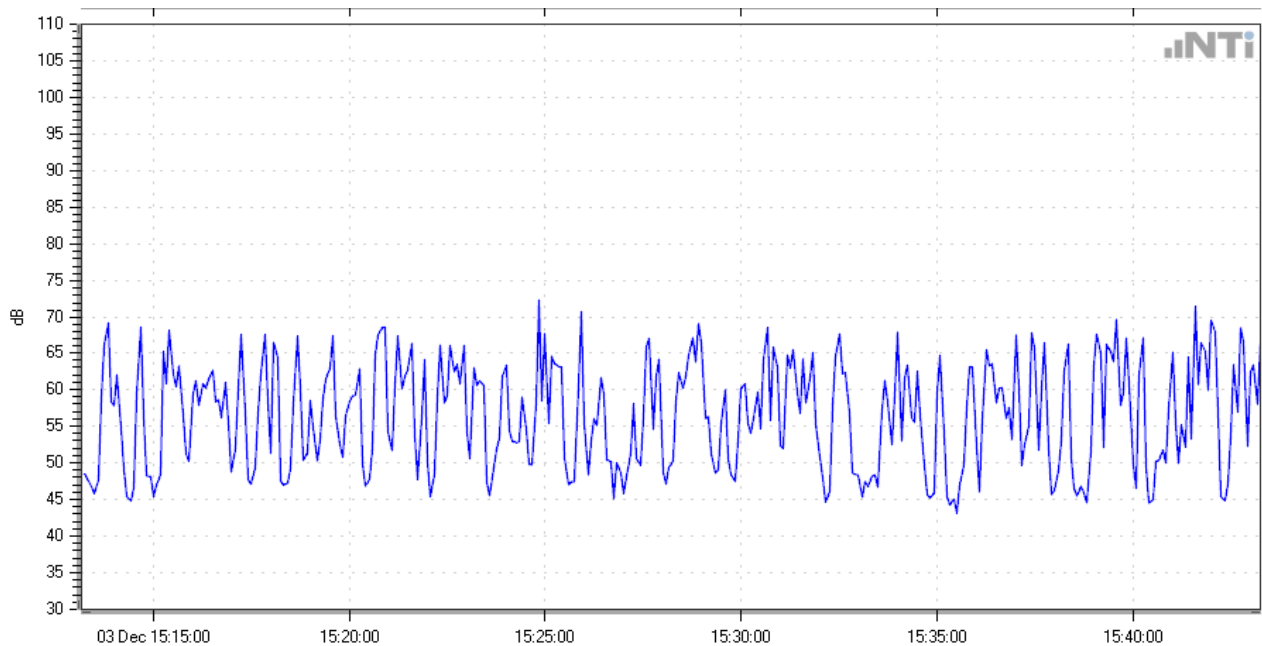


Figure 27: Measurements at Location 2 Daytime.

File: 10

Location: 2

Start time: 18:30hrs

Description of the noise climate: At this location on Saint Peters Rd, the noise climate was dominated by road traffic noise. This measurement location is relatively close to the road, and individual vehicle passing events were clearly evident. Other sources noted including an aircraft event at 18:52hrs which was notable.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-12-03 18:29:52	00:30:00	60.9	88.8	43.0		
Project Result		00:30:00	60.9	88.8	43.0	64.1	45.8

Graph showing LAeq,dt

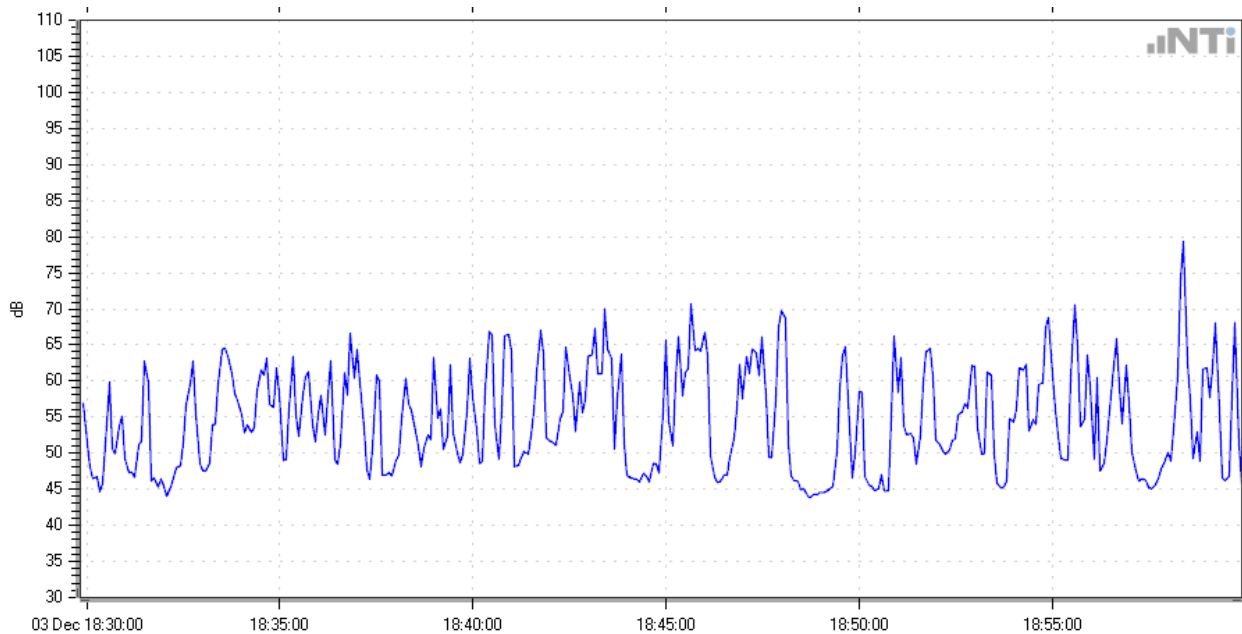


Figure 28: Measurements at Location 2 Daytime.



### 5.2.2 Measurement Results for Evening Location 2

File: 16  
 Location:2  
 Start time: 22:03hrs

Description of the noise climate: At this location on Saint Peters Rd, the noise climate was dominated by road traffic noise. This measurement location was close to a junction and cars could be heard idling occasionally as they entered onto St Peters Rd from Cabra Park. At 22:09hrs a notable aircraft pass over event was witnessed at this location

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 22:03:44</b>	<b>00:30:13</b>	<b>59.2</b>	<b>86.0</b>	<b>44.7</b>		
⊕ <b>-Pause (1)</b>		<b>00:00:14</b>	<b>61.6</b>	<b>68.7</b>	<b>55.2</b>	<b>64.1</b>	<b>56.6</b>
<b>Project Result</b>		<b>00:29:59</b>	<b>59.2</b>	<b>86.0</b>	<b>44.7</b>	<b>62.9</b>	<b>48.3</b>

Graph showing LAeq,dt

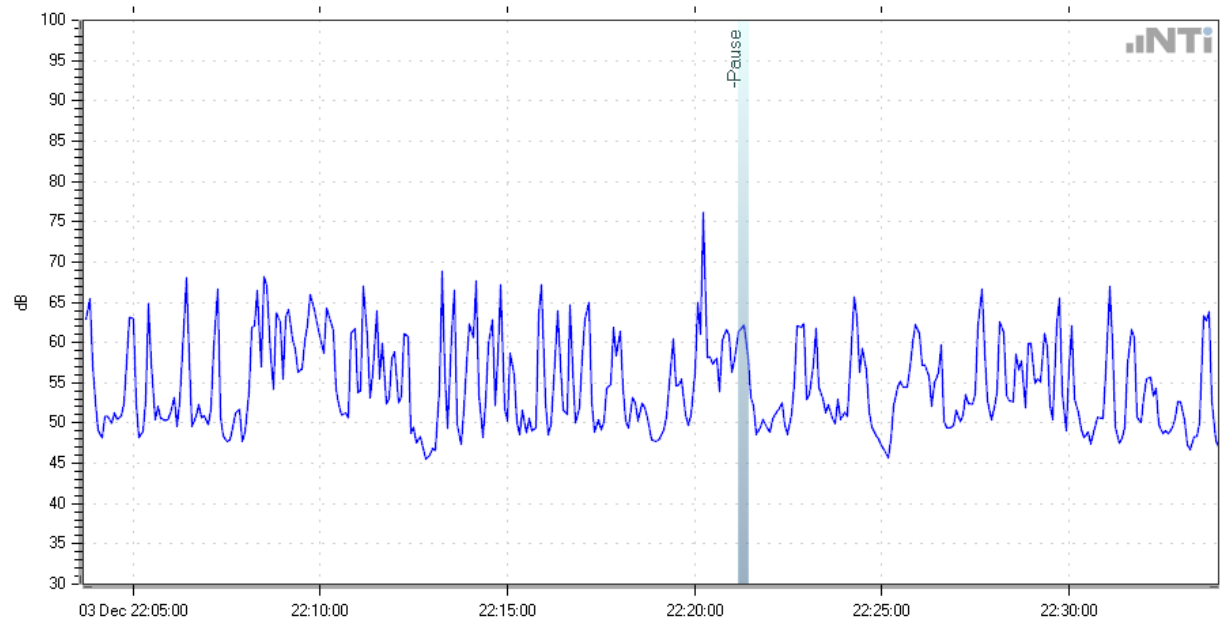


Figure 29: Measurements at Location 2 Evening.

### 5.2.3 Measurement Results for Night-time Location 2

File: 22  
 Location:2  
 Start time: 01:35hrs

Description of the noise climate: At this location on Saint Peters Rd, the noise climate was dominated by road traffic noise, although traffic had fallen considerably. At 01:58hrs, a group of pedestrians were passing nearby, and conversational noise was noticeable. In the absence of local traffic, some distant traffic was audible. In fact, at this time, traffic events were infrequent - every one to two minutes, there would be a vehicle event on Saint Peters Rd.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 01:34:56</b>	<b>00:30:00</b>	<b>54.9</b>	<b>71.3</b>	<b>42.2</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>54.9</b>	<b>71.3</b>	<b>42.2</b>	<b>57.7</b>	<b>46.1</b>

Graph showing LAeq,dt

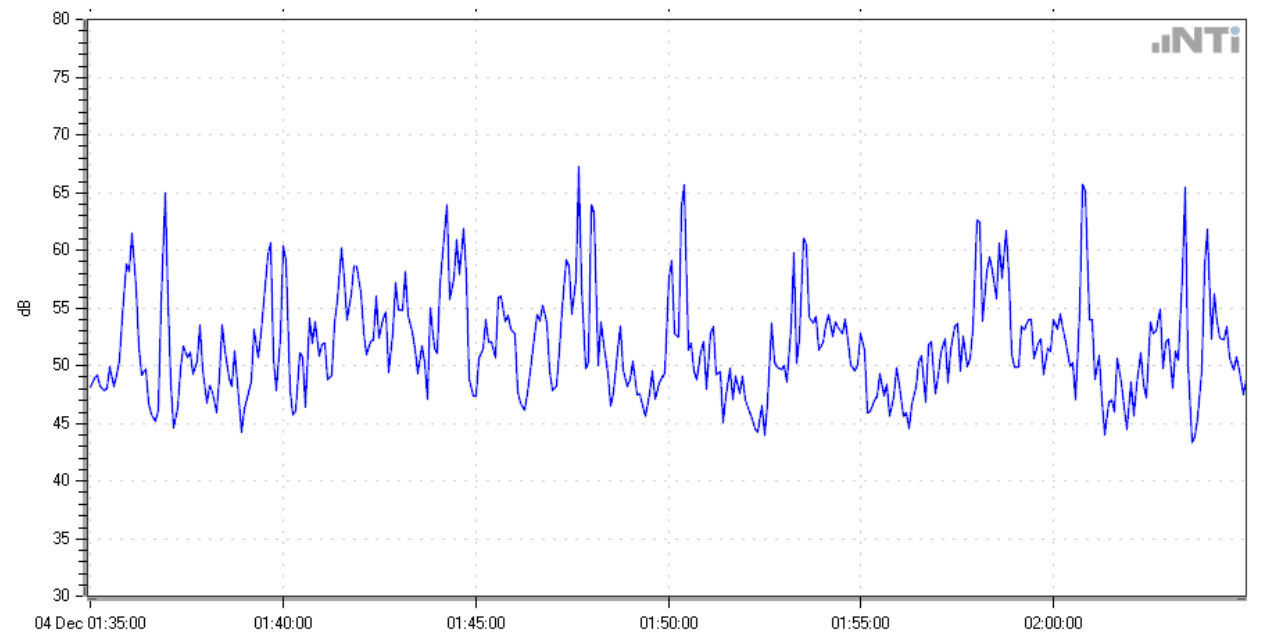


Figure 30: Measurements at Location 2 Night-time.

File: 28  
 Location: 2  
 Start time: 04:56hrs

Description of the noise climate: At this location on Saint Peters Rd, the noise climate was dominated by road traffic noise, although traffic had fallen considerably. Traffic was very infrequent at this time, but there were discrete vehicle events on occasion. At one point a van with a trailer passed nearby, which could have been a trades person enroute to work.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 04:55:14</b>	<b>00:30:00</b>	<b>53.5</b>	<b>78.2</b>	<b>41.2</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>53.5</b>	<b>78.2</b>	<b>41.2</b>	<b>55.0</b>	<b>44.9</b>

Graph showing LAeq,dt

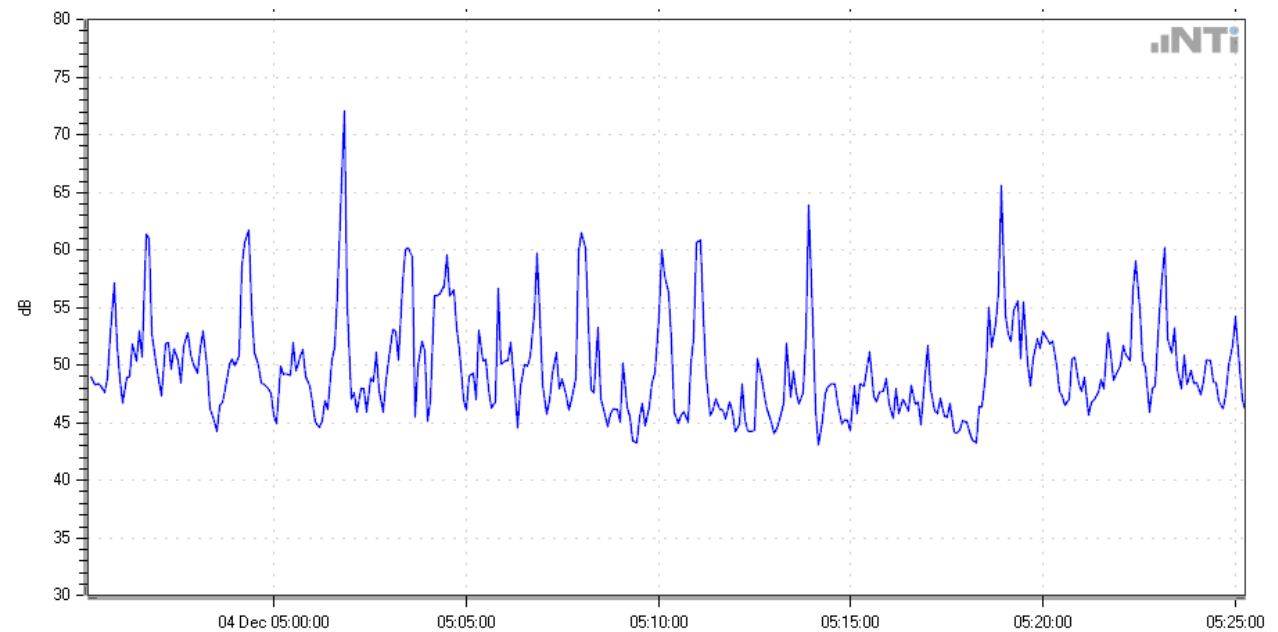


Figure 31: Measurements at Location 2 Night-time.

### 5.3 Location 3

#### 5.3.1 Measurement Results for Daytime Location 3

File: 1  
 Location:3  
 Start time: 12:49hrs

Description of the noise climate: Description of the noise climate: this measurement location is dominated by road traffic noise. During the early part of this measurement, a car was idling nearby within the vicinity of the microphone. Other sources included some construction noise taking place in the distance at a residential property. Other sounds included birdsong and passing motorbikes. Also, measurements included noise from pedestrians and children passing the noise measurement location. This is a typical urban location, and there was a substantial quantity of road traffic present on Connacht Street. There was some very occasional traffic on Ulster Street; however, it was very light.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 12:49:24</b>	<b>00:30:00</b>	<b>61.1</b>	<b>78.7</b>	<b>44.9</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>61.1</b>	<b>78.7</b>	<b>44.9</b>	<b>64.1</b>	<b>52.6</b>

Graph showing LAeq,dt

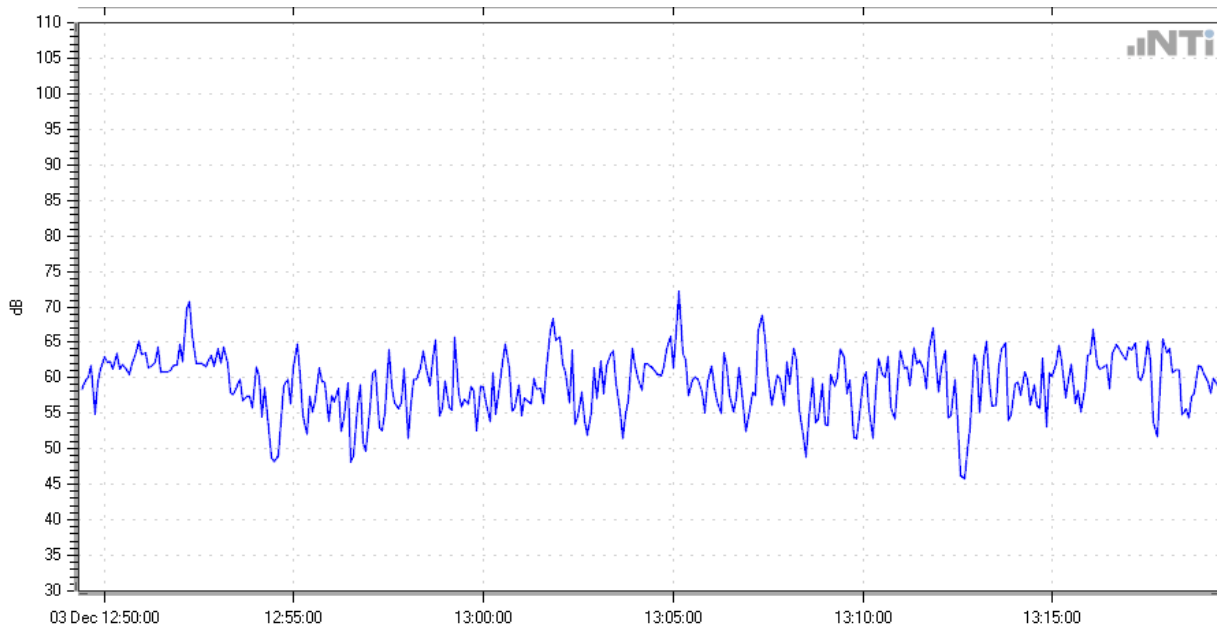


Figure 32: Measurements at Location 3 Daytime.

File: 7  
 Location: 3  
 Start time: 16:45hrs

Description of the noise climate: this location is dominated by road traffic noise. Other noise sources included noise from an intruder alarm which ran for a very short period of time. Also, measurements included noise from pedestrians and children passing the noise measurement location. This is a typical urban location, and there was a substantial quantity of road traffic present on Connacht Street.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-12-03 16:45:02	00:30:00	62.0	89.1	42.5		
Project Result		00:30:00	62.0	89.1	42.5	63.9	49.4

Graph showing LAeq,dt

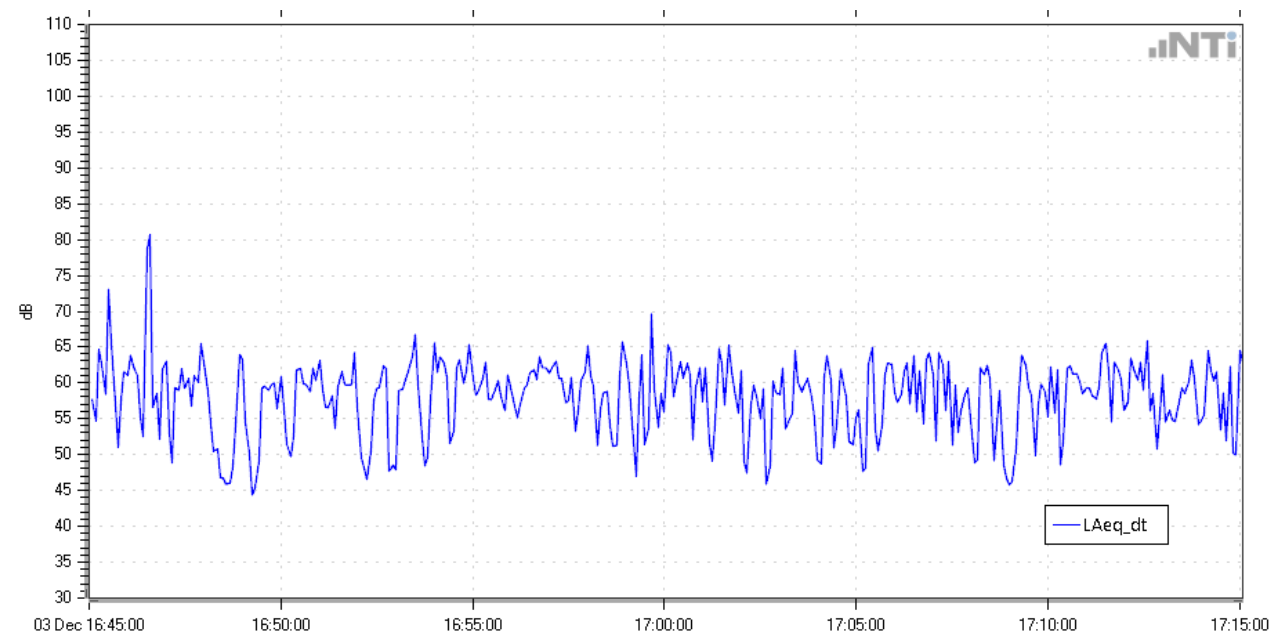


Figure 33: Measurements at Location 3 Daytime.

### 5.3.2 Measurement Results for Evening Location 3

File: 14  
 Location: 3  
 Start time: 20:57 hrs

Description of the noise climate: Road traffic noise clearly dominated this location. Traffic was consistent and busy at this time. Other sources included noise from a church bell, which was audible in the distance. Pedestrians could be heard passing nearby, which included a group of children with a parent.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 20:57:30</b>	<b>00:30:00</b>	<b>59.2</b>	<b>74.9</b>	<b>41.1</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>59.2</b>	<b>74.9</b>	<b>41.1</b>	<b>63.7</b>	<b>46.0</b>

Graph showing LAeq,dt

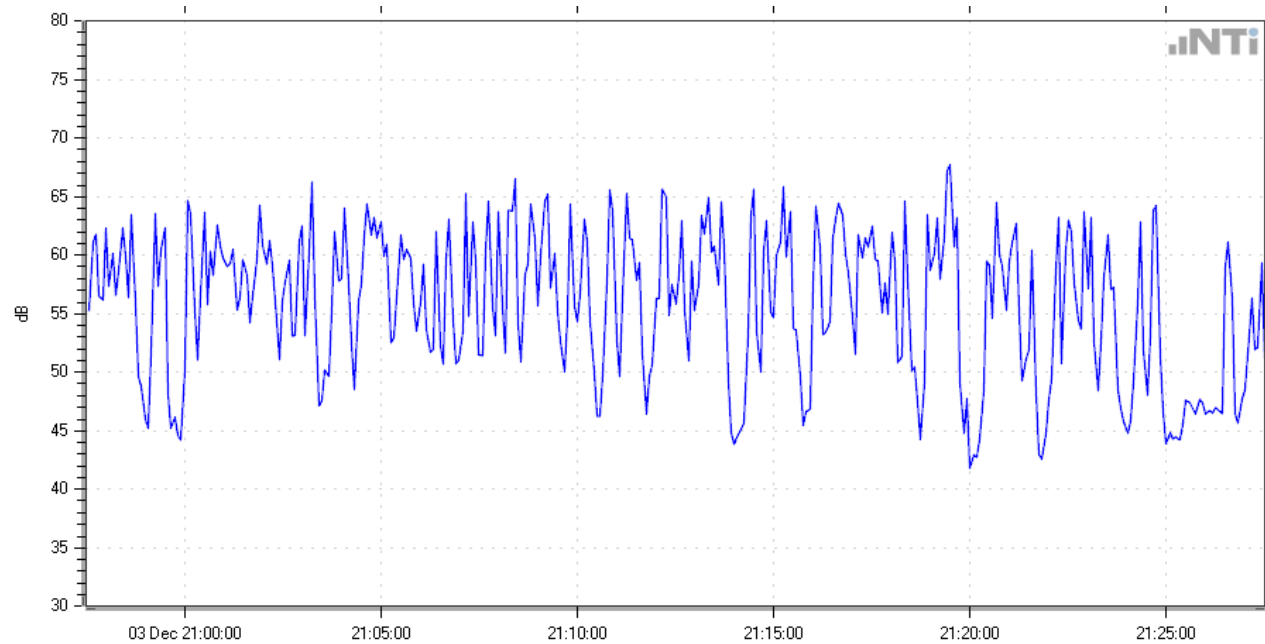


Figure 34: Measurements at Location 3 Evening.

### 5.3.3 Measurement Results for Night time Location 3

File: 18  
 Location:3  
 Start time: 23:22hrs

Description of the noise climate: while the quantity of road traffic had fallen considerably, it still remains the dominant source of noise at this location. This measurement location at Connaught Street is close to its junction with Ulster Street. On occasion, vehicles could be heard idling nearby as they approached Connaught Street from Ulster Street, awaiting to proceed on to Connaught Street.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 23:22:42</b>	<b>00:30:00</b>	<b>58.8</b>	<b>77.1</b>	<b>41.3</b>		
<b>-Overload (4)</b>		<b>00:00:05</b>	<b>61.5</b>	<b>66.8</b>	<b>53.0</b>	<b>64.9</b>	<b>54.5</b>
<b>Project Result</b>		<b>00:30:00</b>	<b>58.8</b>	<b>77.1</b>	<b>41.3</b>	<b>63.3</b>	<b>46.1</b>

Graph showing LAeq,dt

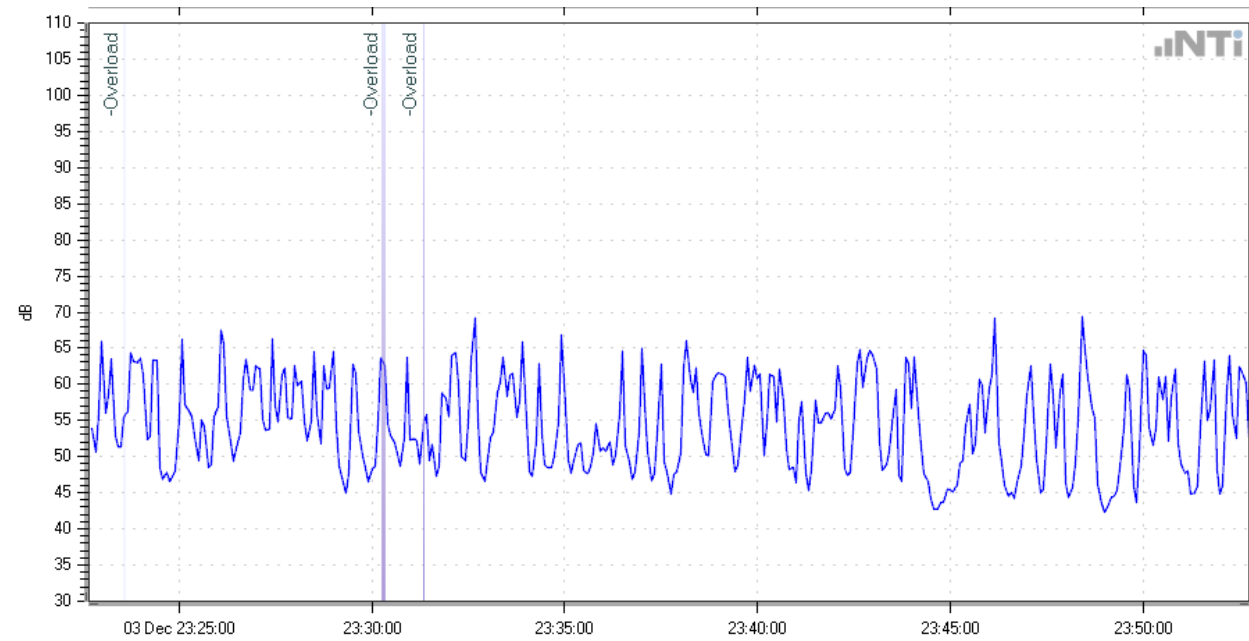


Figure 35: Measurements at Location 3 Night.

File: 24

Location: 3

Start time: 02:45hrs

Description of the noise climate: at this time, road traffic noise had fallen considerably, and there were gaps between vehicle events. Traffic noise remains the dominant source of noise at this location and at this time.

Type	Start	Duration	L <sub>Aeq</sub> [dB]	L <sub>AFmax</sub> [dB]	L <sub>AFmin</sub> [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 02:45:18</b>	<b>00:30:00</b>	<b>53.0</b>	<b>70.9</b>	<b>37.7</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>53.0</b>	<b>70.9</b>	<b>37.7</b>	<b>56.8</b>	<b>40.0</b>

Graph showing L<sub>Aeq,dt</sub>

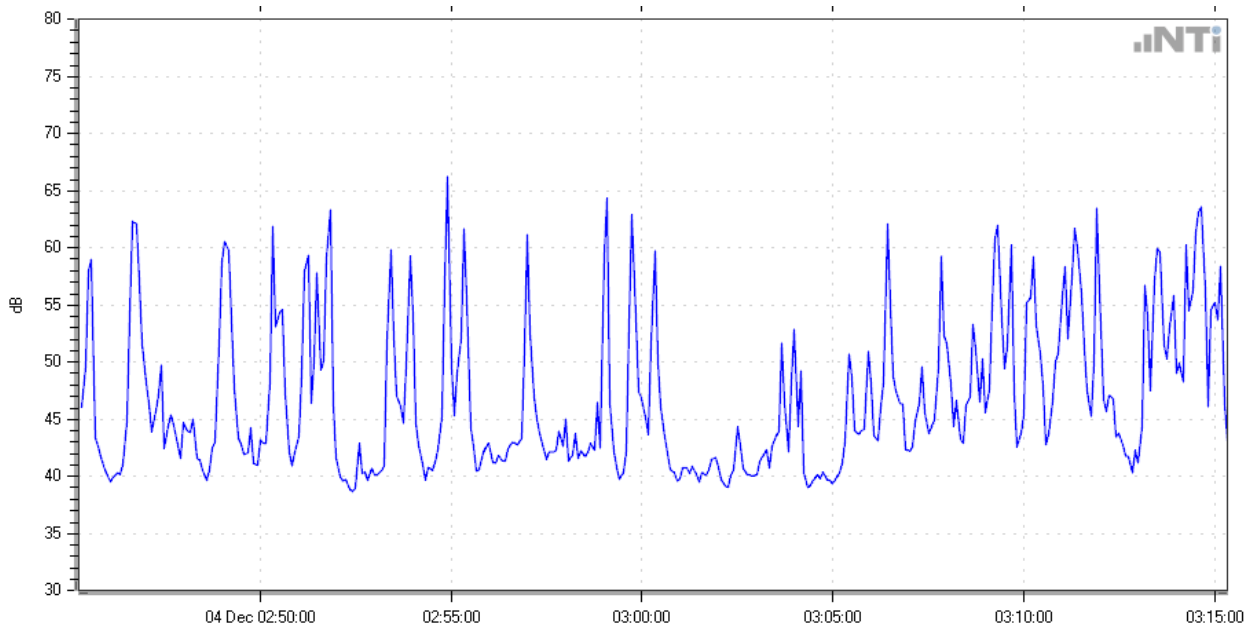


Figure 36: Measurements at Location 3 Night.



## 5.4 Location 4

### 5.4.1 Measurement Results for Daytime Location 4

File: 3  
 Location:4  
 Start time: 13:59 hrs

Description of the noise climate: The noise climate at this location is dominated by the heavily trafficked Phibsborough Road (R108), which remains the dominant source of noise right throughout this measurement period. Other noise sources include noise from pedestrians using footpaths nearby and an auditory warning from the pedestrian crossing. In addition, an emergency vehicle passed on the road nearby at 14:08hrs which gave rise to the highest noise levels measured at that location. Road traffic noise consisted of passengers' cars, buses, HGVs vans, and motorcycles.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-12-03 13:59:04	00:30:00	72.4	101.0	54.1		
Project Result		00:30:00	72.4	101.0	54.1	70.7	59.4

Graph showing LAeq,dt

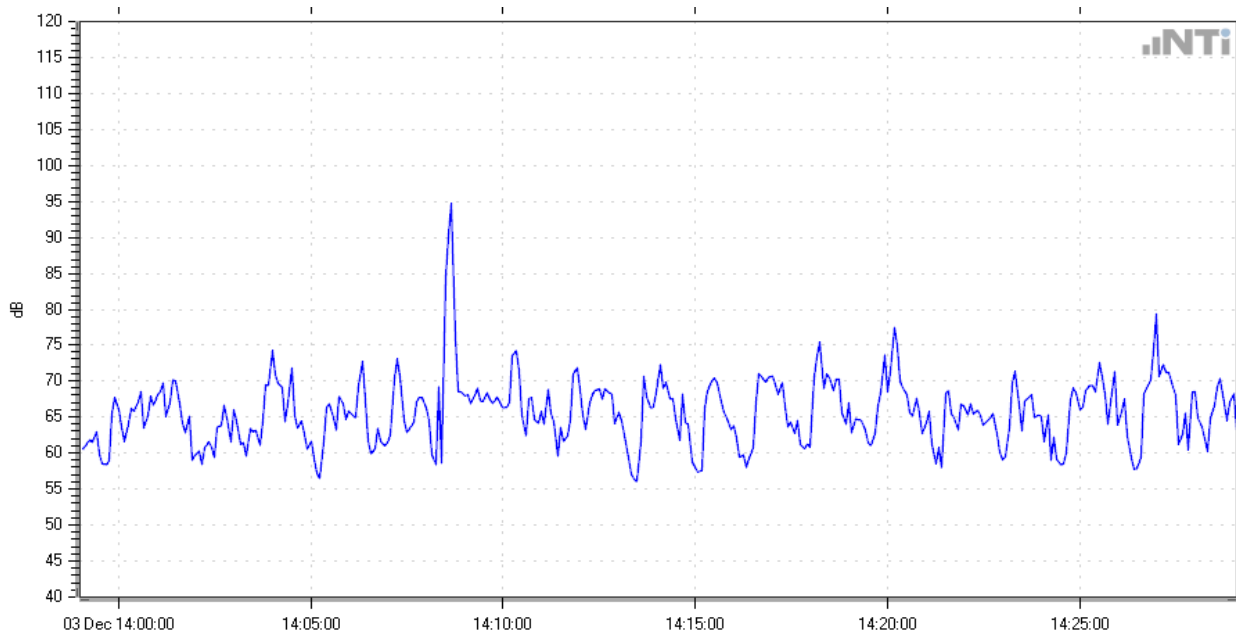


Figure 37: Measurements at Location 4 Daytime.

File: 9  
 Location: 4  
 Start time: 17:54hrs

Description of the noise climate: The noise climate at this location is dominated by the heavily trafficked Phibsborough Road (R108) which remains the dominant source of noise right throughout his measurement period. Other sources noted included noise from the pedestrian crossing nearby.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 17:53:26</b>	<b>00:30:39</b>	<b>66.1</b>	<b>85.4</b>	<b>52.9</b>		
⊞ -Pause (2)		00:00:41	63.6	72.0	58.9	65.8	60.5
<b>Project Result</b>		<b>00:29:58</b>	<b>66.1</b>	<b>85.4</b>	<b>52.9</b>	<b>68.9</b>	<b>58.6</b>

Graph showing LAeq,dt

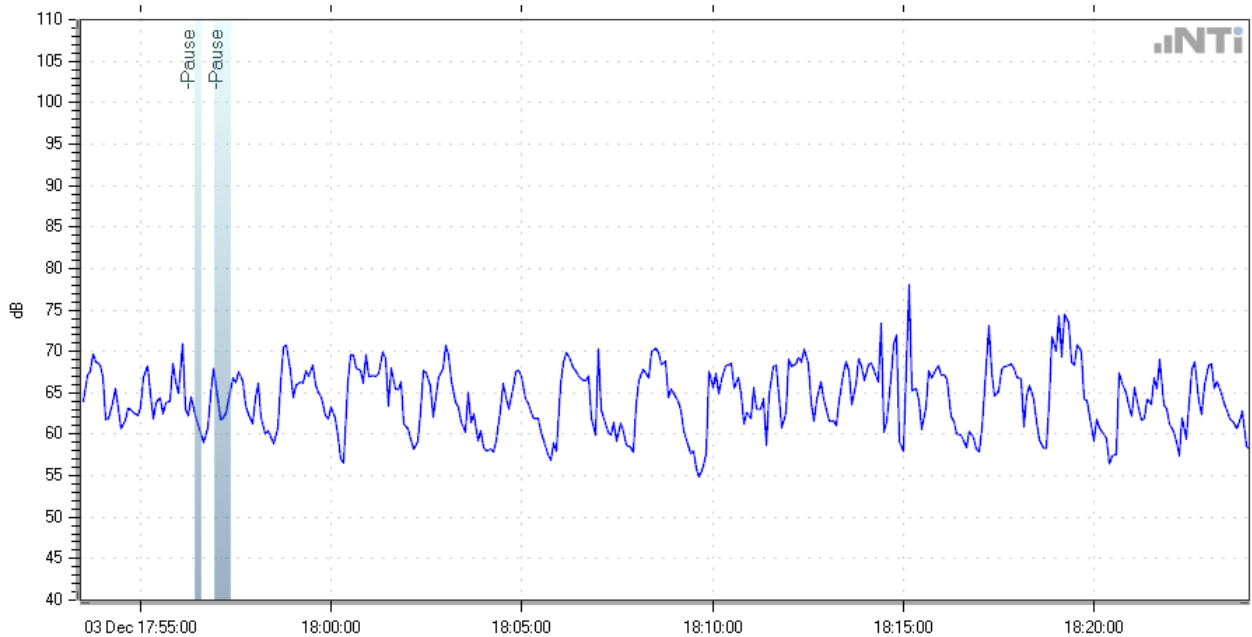


Figure 38: Measurements at Location 4 Daytime.

### 5.4.2 Measurement Results for Evening Location 4

File: 13  
 Location:4  
 Start time: 20:22hrs

Description of the noise climate: this location is a heavily trafficked route and roads traffic noise remains the dominant source of noise at this location full. The traffic noise climate is made up of noise from cars, motorbikes, HGVs and modified cars on occasion. Other sources included noise from the auditory warnings on the pedestrian crossing as well as noise from vehicles idling nearby, while waiting for the traffic signals to allow them to proceed.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 20:22:26</b>	<b>00:31:15</b>	<b>67.7</b>	<b>86.5</b>	<b>51.0</b>		
⊕ <b>-Pause (1)</b>		<b>00:01:16</b>	<b>65.3</b>	<b>72.3</b>	<b>59.9</b>	<b>69.1</b>	<b>61.2</b>
<b>Project Result</b>		<b>00:29:59</b>	<b>67.8</b>	<b>86.5</b>	<b>51.0</b>	<b>70.5</b>	<b>58.6</b>

Graph showing LAeq,dt

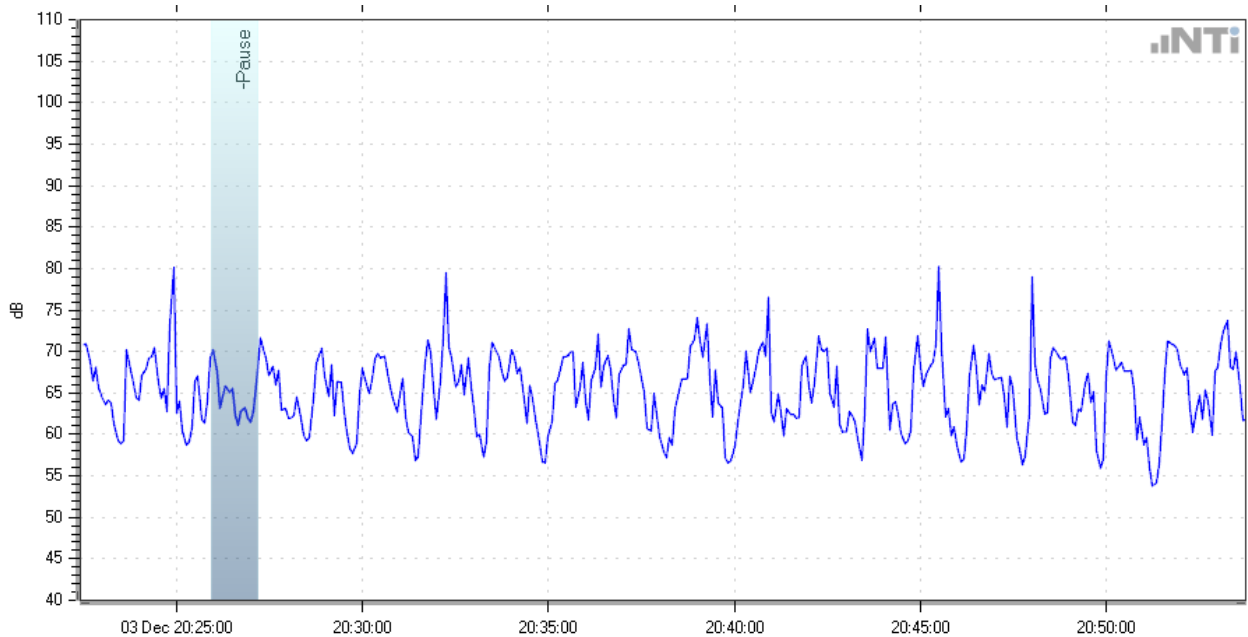


Figure 39: Measurements at Location 4 Evening.

### 5.4.3 Measurement Results for Night-time Location 4

File: 20  
 Location:4  
 Start time: 23:55 hrs

Description of the noise climate: this location is a very heavily trafficked route. This measurement location is directly opposite a Tesco store. During this measurement, a HGV delivery was taking place where staff were unloading roll cages from the HGV. While Road traffic noise remained dominant, delivery noise was clearly audible. At 00:35hrs, the HGV departed, and another stopped outside the store to unload a second delivery. This delivery was also clearly audible. At 00:43hrs, a mechanical road sweeper passed through the areas cleaning the streets.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 00:27:26</b>	<b>00:30:00</b>	<b>70.1</b>	<b>93.8</b>	<b>50.2</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>70.1</b>	<b>93.8</b>	<b>50.2</b>	<b>73.3</b>	<b>60.1</b>

Graph showing LAeq,dt

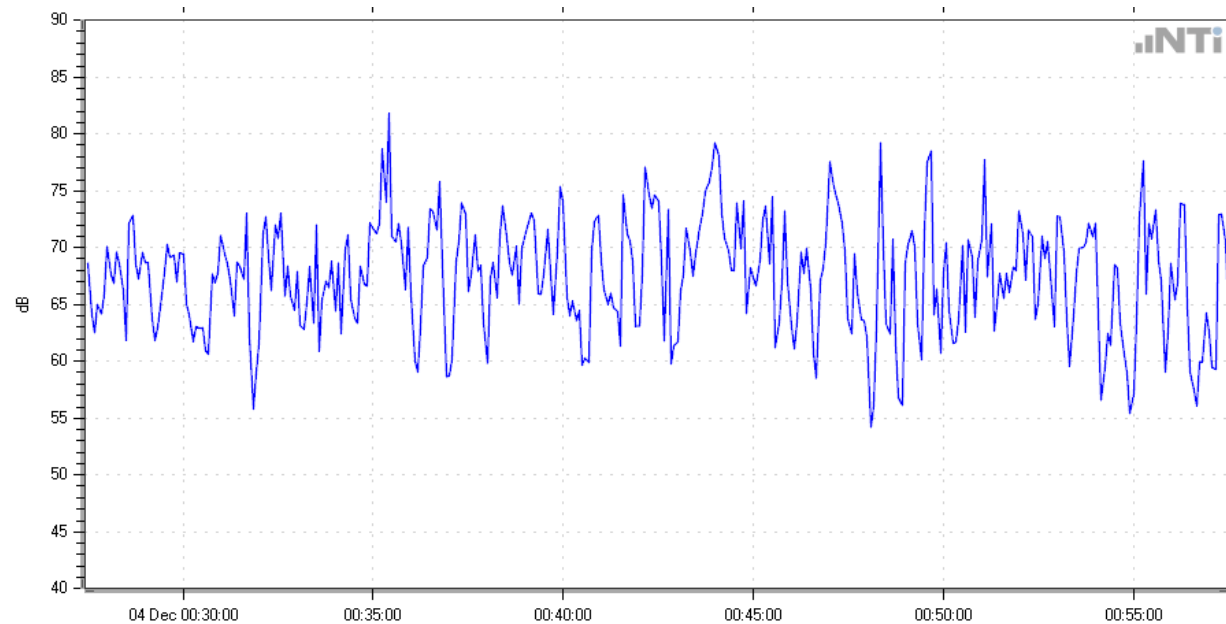


Figure 40: Measurements at Location 4 Night.

File: 26  
 Location:4  
 Start time: 03:50hrs

Description of the noise climate: At this time, road traffic noise had fallen considerably at this location; however, it still remains the dominant source of the noise. Auditory sounds from the pedestrian crossing were ever-present and clearly audible. Unlike previous measurements at this location, there were occasional gaps between traffic.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 03:49:34</b>	<b>00:30:00</b>	<b>64.6</b>	<b>84.8</b>	<b>44.1</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>64.6</b>	<b>84.8</b>	<b>44.1</b>	<b>68.7</b>	<b>50.6</b>

Graph showing LAeq,dt

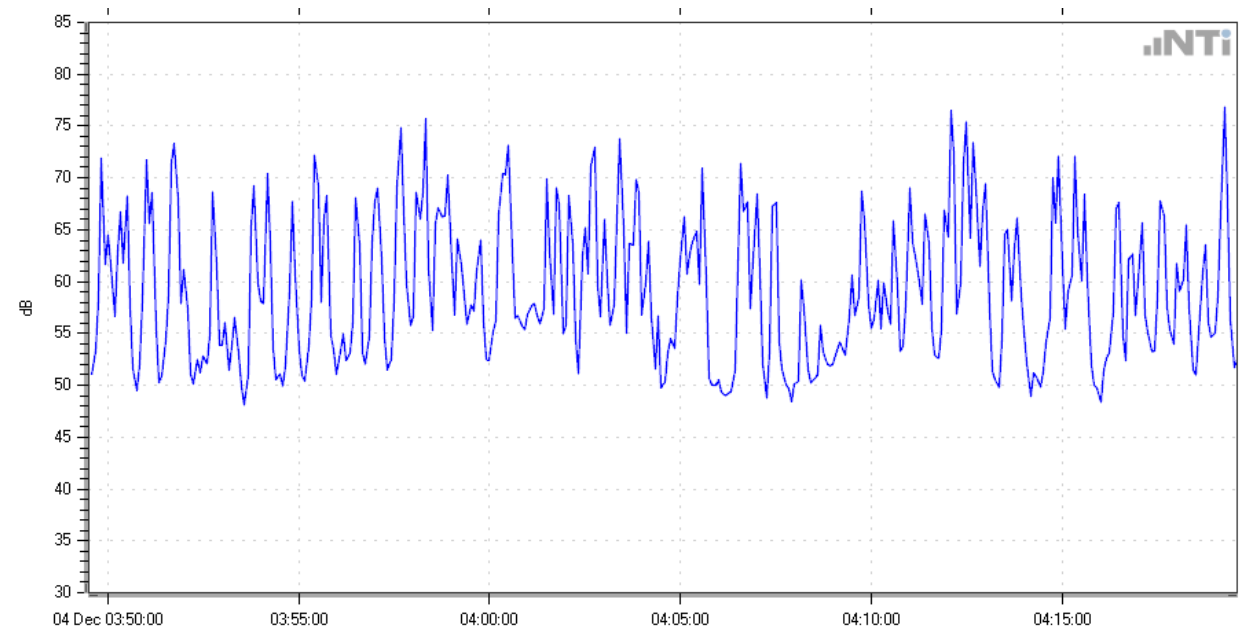


Figure 41: Measurements at Location 4 Night.

## 5.5 Location 5

### 5.5.1 Daytime Location 5

Description of the noise climate: this location is close to St Peters National School. During break periods at the school, children playing externally remains the dominant source of noise. During this break period there were two discrete breaks between 12:10 and 13:10. At 14:30hrs children could be heard leaving the school with some playing in the school yard. In the absence of noise from the school other sources included road traffic noise and aircraft movements.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 12:00:00	00:24:44	75.5	87.5	45.3	79.1	49.6
30'	2021-12-03 12:30:00	00:30:00	75.0	87.9	44.8	79.1	49.4
30'	2021-12-03 13:00:00	00:30:00	58.7	78.3	43.1	62.1	46.8
30'	2021-12-03 13:30:00	00:30:00	53.6	73.9	43.2	55.0	47.1
30'	2021-12-03 14:00:00	00:30:00	56.5	75.1	44.0	58.6	47.4
30'	2021-12-03 14:30:00	00:30:00	50.2	70.0	41.1	51.7	43.8
30'	2021-12-03 15:00:00	00:30:00	51.6	79.6	41.1	47.4	43.2
30'	2021-12-03 15:30:00	00:30:00	47.3	68.5	40.4	47.1	43.3
30'	2021-12-03 16:00:00	00:30:00	49.0	76.8	40.2	47.0	42.3
30'	2021-12-03 16:30:00	00:30:00	45.8	66.4	39.5	45.4	41.5
30'	2021-12-03 17:00:00	00:30:00	48.6	74.3	39.1	46.7	41.8
30'	2021-12-03 17:30:00	00:30:00	48.4	67.1	38.6	47.0	41.8
30'	2021-12-03 18:00:00	00:30:00	47.7	73.9	39.3	45.7	41.5
30'	2021-12-03 18:30:00	00:30:00	50.1	70.0	39.8	51.3	42.3

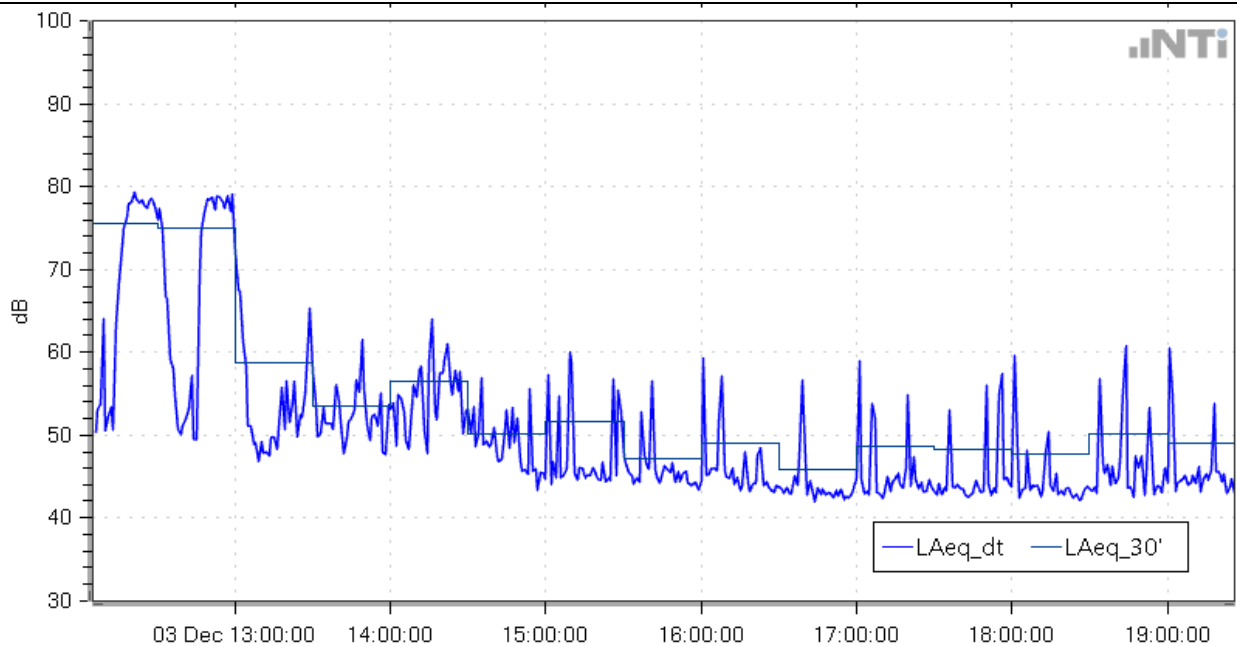


Figure 42: Measurements at Location 5 Daytime.

### 5.5.2 Evening Location 5

Description of the noise climate: in the absence of any noise from the nearby school, road traffic noise remains the dominant source of noise at this location. Occasional air traffic was also noted in the measurements, but it was infrequent.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 19:00:00	00:30:00	49.1	75.5	41.1	46.7	42.7
30'	2021-12-03 19:30:00	00:30:00	47.4	64.4	40.6	47.2	42.9
30'	2021-12-03 20:00:00	00:30:00	49.4	75.7	41.5	47.0	43.3
30'	2021-12-03 20:30:00	00:30:00	46.8	66.5	40.1	47.5	42.6
30'	2021-12-03 21:00:00	00:30:00	53.6	75.1	40.6	51.0	42.9
30'	2021-12-03 21:30:00	00:30:00	50.7	72.2	42.5	50.7	44.8
30'	2021-12-03 22:00:00	00:30:00	51.8	76.0	42.8	49.9	45.2
30'	2021-12-03 22:30:00	00:30:00	46.5	58.6	41.8	48.2	44.2

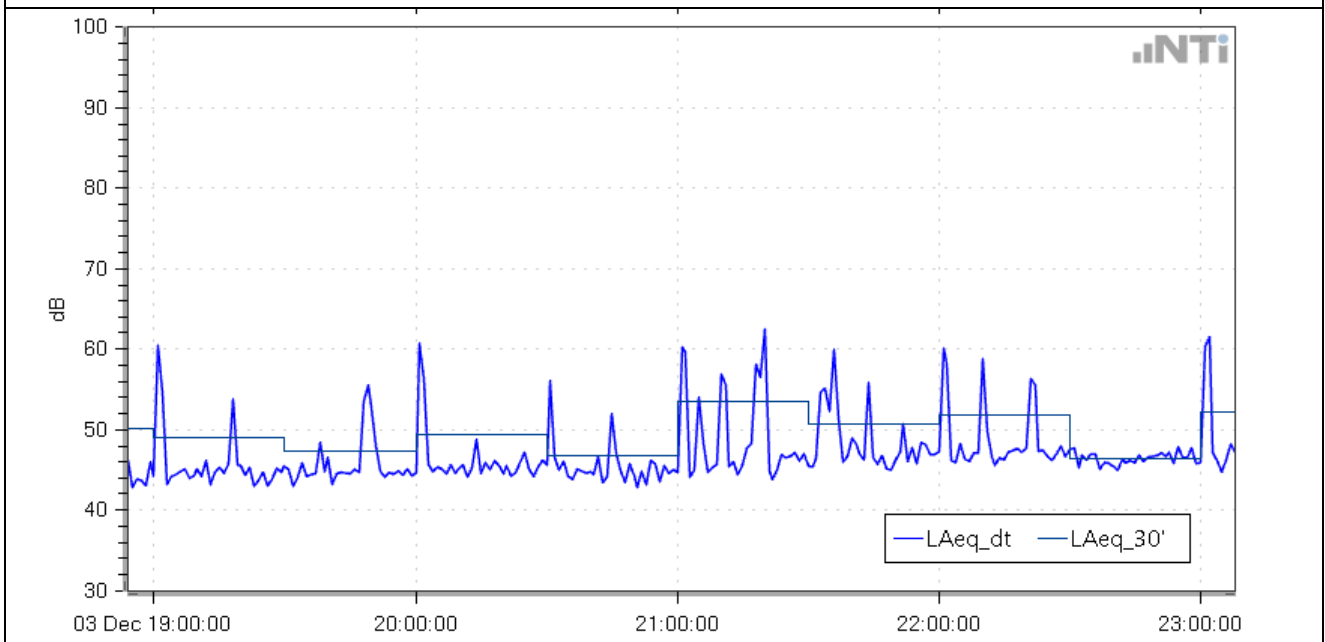


Figure 43: Measurements at Location 5 during the evening period.

### 5.5.3 Night time Location 5

Description of the noise climate: in the absence of any noise from the nearby school, road traffic noise remains the dominant source of noise at this location.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 23:00:00	00:30:00	52.2	78.3	42.2	51.0	45.0
30'	2021-12-03 23:30:00	00:30:00	46.6	60.8	41.0	48.7	43.5
30'	2021-12-04 00:00:00	00:30:00	46.0	60.6	41.1	47.8	43.6
30'	2021-12-04 00:30:00	00:30:00	47.8	61.4	42.6	49.8	44.9
30'	2021-12-04 01:00:00	00:30:00	49.5	64.7	42.4	51.4	45.9
30'	2021-12-04 01:30:00	00:30:00	48.1	60.9	41.2	50.3	44.5
30'	2021-12-04 02:00:00	00:30:00	46.9	67.1	39.3	49.1	42.6
30'	2021-12-04 02:30:00	00:30:00	44.8	57.7	38.4	47.2	41.0
30'	2021-12-04 03:00:00	00:30:00	44.9	60.0	38.4	47.3	41.1
30'	2021-12-04 03:30:00	00:30:00	46.6	67.1	39.5	49.0	42.5
30'	2021-12-04 04:00:00	00:30:00	48.5	61.9	40.6	50.9	44.4
30'	2021-12-04 04:30:00	00:30:00	49.5	73.7	40.3	51.8	44.7
30'	2021-12-04 05:00:00	00:30:00	48.2	63.9	40.8	51.0	43.9
30'	2021-12-04 05:30:00	00:11:55	51.2	68.3	43.4	54.0	46.3

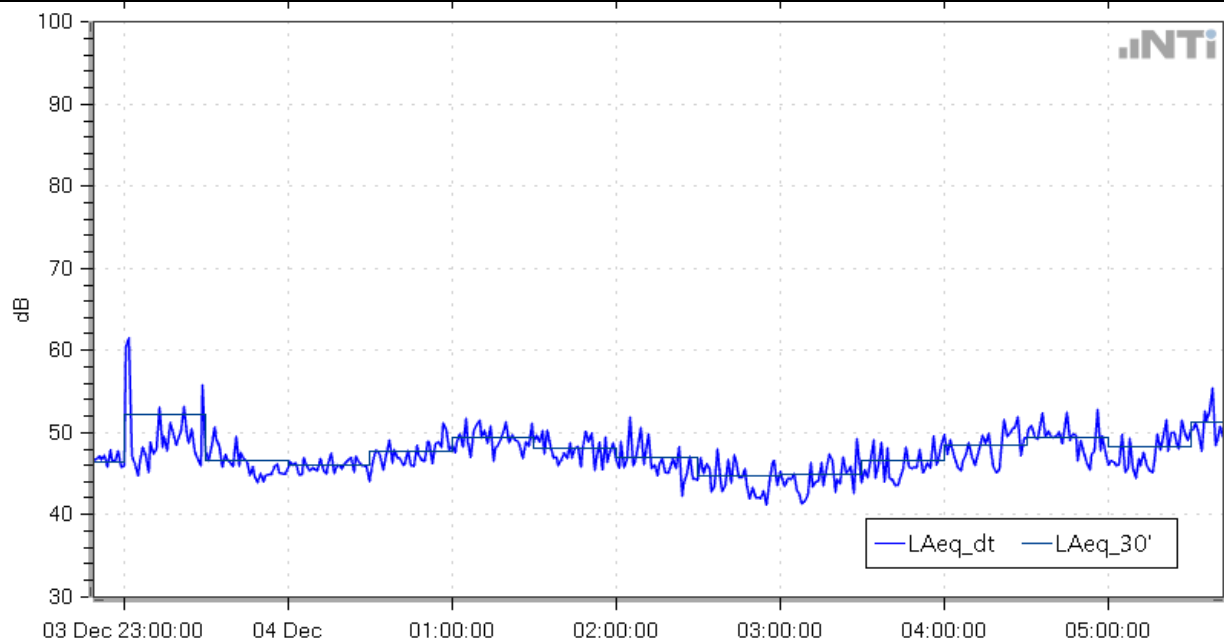


Figure 44: Measurements at Location 5 during the night period.



## 5.6 Location 6

### 5.6.1 Measurement Results for Daytime Location 6

File: 6  
 Location: 6  
 Start time: 15:48hrs

Description of the noise climate: The noise climate at this location was dominated by road traffic noise from Saint Peters Rd. Other noise sources included aircraft traffic that was audible in the area and some noise from pedestrians nearby. In addition, a car passed the measurement location on one occasion, and its music was clearly audible. Other sources included noise from vehicles being parked in the vicinity of this measurement location.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded	2021-12-03 15:48:16	00:30:00	53.8	70.8	39.7		
Project Result		00:30:00	53.8	70.8	39.7	58.0	42.9

Graph showing LAeq,dt

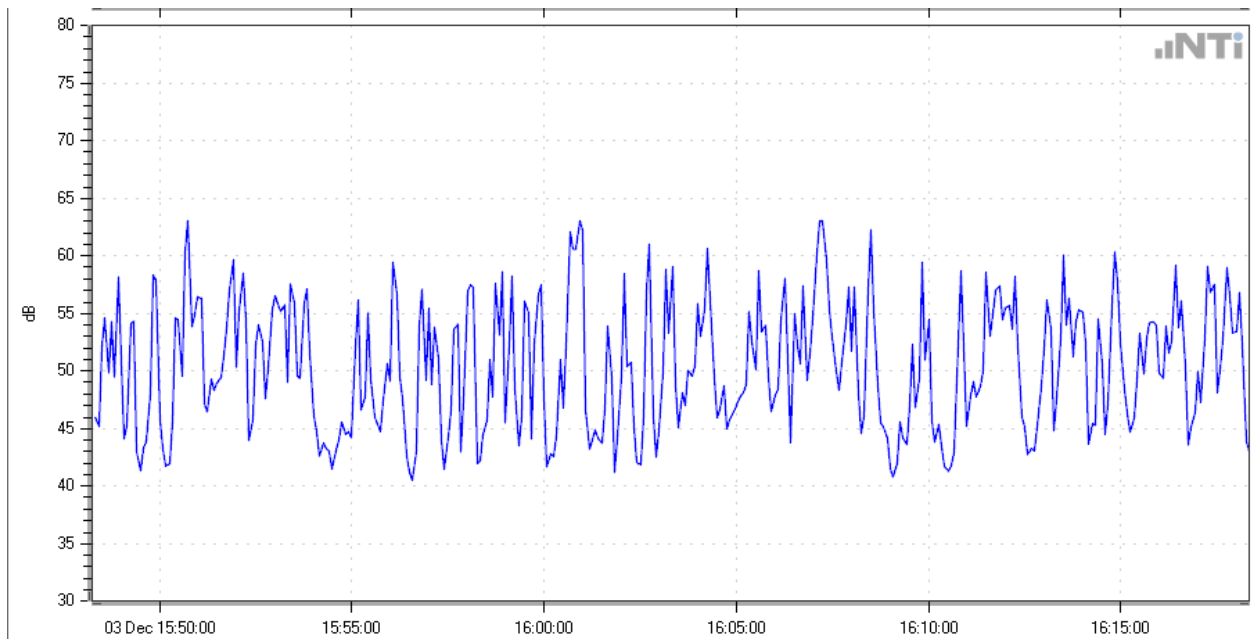


Figure 45: Measurements at Location 6 during a Daytime period.

### 5.6.2 Measurement Results for Evening Location 6

File: 15  
 Location:6  
 Start time: 21:30hrs

Description of the noise climate: The noise climate at this location was dominated by road traffic noise from Saint Peters Rd. Additionally, there was occasional aircraft movements that were clearly audible at this location. Some noise was also audible from some very light vehicular traffic using the car park nearby.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 21:30:04</b>	<b>00:30:00</b>	<b>51.9</b>	<b>72.2</b>	<b>43.1</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>51.9</b>	<b>72.2</b>	<b>43.1</b>	<b>55.2</b>	<b>45.0</b>

Graph showing LAeq,dt

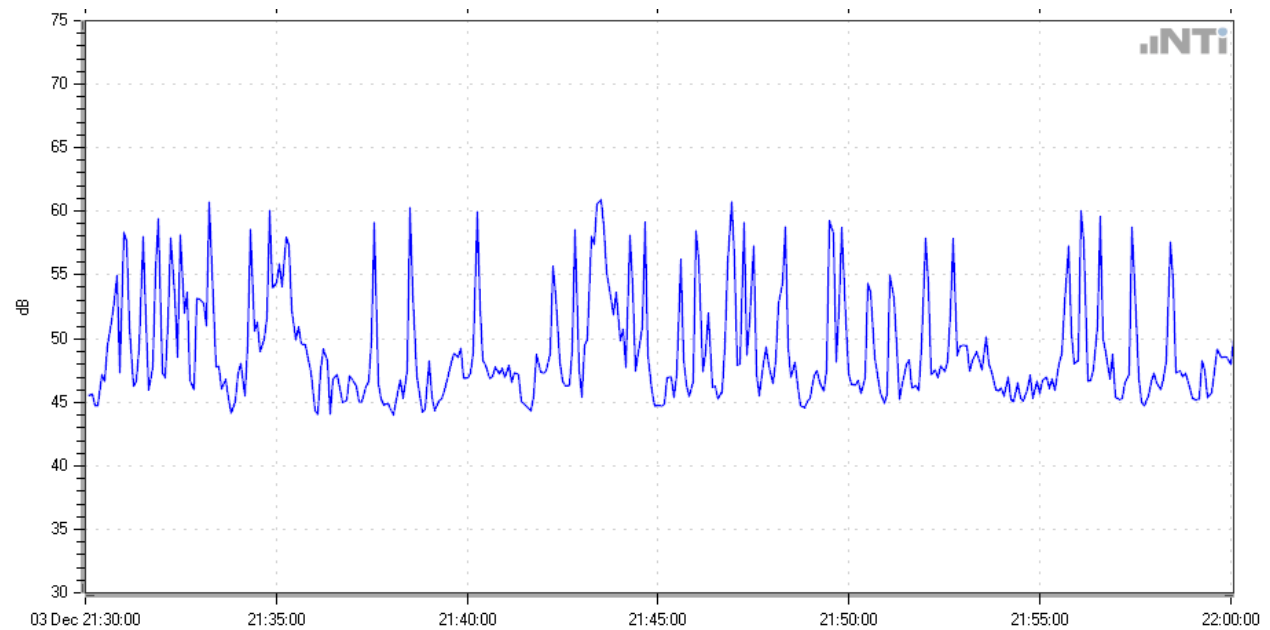


Figure 46: Measurements at Location 6 during an Evening period.

### 5.6.3 Measurement Results for Night-time Location 6

File: 23  
 Location: 6  
 Start time: hrs

Description of the noise climate: At this time, road traffic noise had fallen considerably, and there was add minimal contribution from local traffic. Noise from distant traffic, however could be heard. There was some occasional noise from steel gates in use at Dalymount park, which could be heard rattling during some light gusting.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 02:08:24</b>	<b>00:32:57</b>	<b>51.4</b>	<b>74.6</b>	<b>40.2</b>		
<b>-Pause (1)</b>		<b>00:02:58</b>	<b>57.8</b>	<b>74.6</b>	<b>43.7</b>	<b>60.9</b>	<b>51.8</b>
<b>Project Result</b>		<b>00:29:59</b>	<b>49.6</b>	<b>71.2</b>	<b>40.2</b>	<b>52.2</b>	<b>42.7</b>

Graph showing LAeq,dt

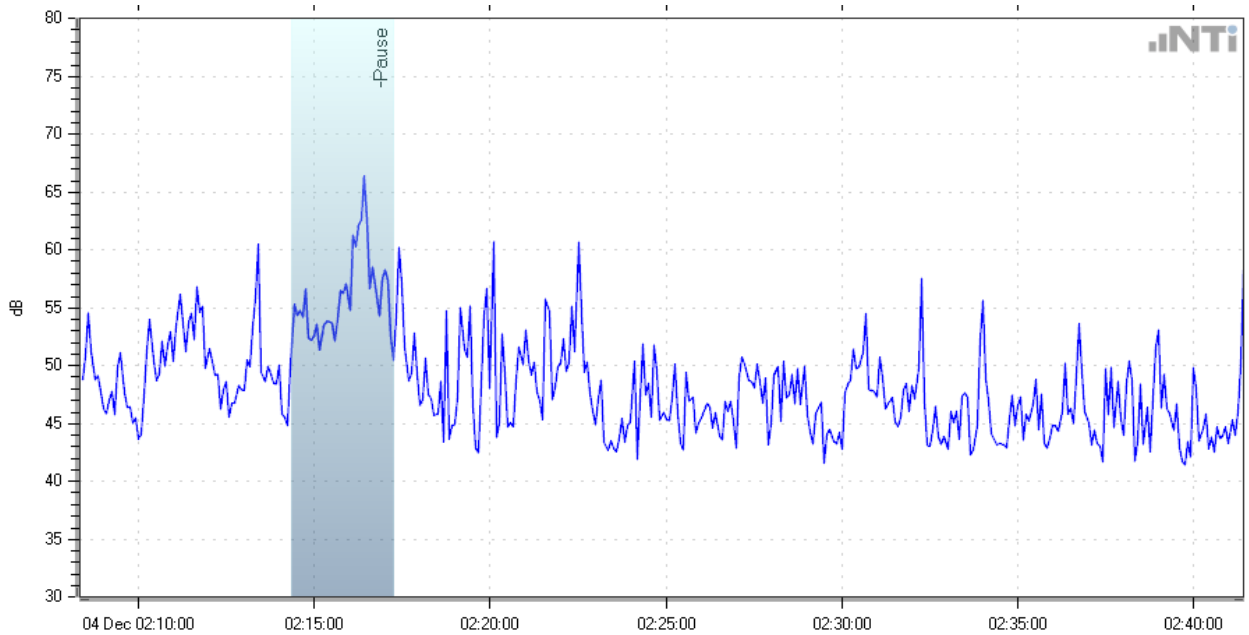


Figure 47: Measurements at Location 6 during a Night period.

File: 29

Location:6

Start time: 05:27hrs

Description of the noise climate: At this time, road traffic noise had fallen considerably, and there was a minimal contribution from local traffic. There was no local traffic during this measurement; however, distant traffic could be heard. There was some occasional noise from steel gates in use at Dalymount Park, which could be heard rattling during some light gusting.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 05:27:02</b>	<b>00:30:00</b>	<b>51.7</b>	<b>70.6</b>	<b>40.8</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>51.7</b>	<b>70.6</b>	<b>40.8</b>	<b>54.4</b>	<b>45.0</b>

Graph showing LAeq,dt

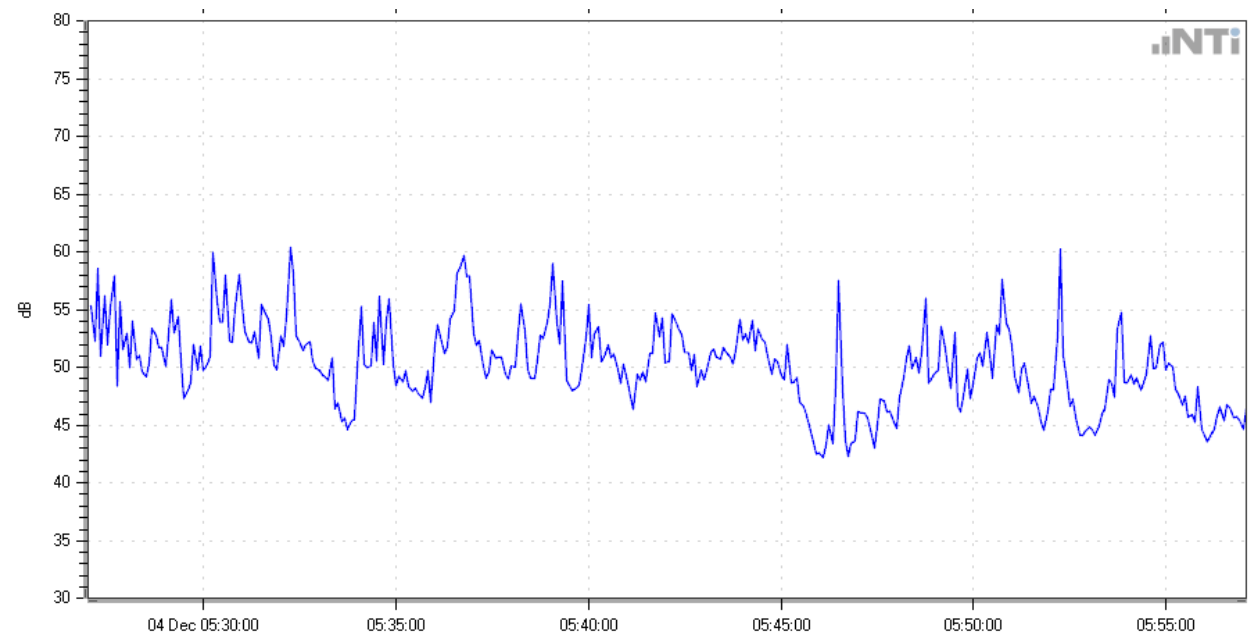


Figure 48: Measurements at Location 6 during a Night period.

## 5.7 Location 7

### 5.7.1 Daytime Location 7

Description of the noise climate: This noise monitoring location was well set back from any local road traffic noise sources. The noise climate at this location remained dominated by distant traffic noise, which could clearly be heard. Other noise sources noted at this location included noise from emergency vehicles that occurred on occasion. This location is relatively close to the car park at Dalymount Park, and there was some light car park traffic.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 12:30:00	00:29:42	54.0	66.3	47.0	56.9	48.5
30'	2021-12-03 13:00:00	00:30:00	50.6	74.2	46.3	51.1	47.8
30'	2021-12-03 13:30:00	00:30:00	49.3	68.3	46.3	49.6	47.7
30'	2021-12-03 14:00:00	00:30:00	49.5	67.4	46.1	50.1	47.9
30'	2021-12-03 14:30:00	00:30:00	50.4	69.3	45.4	51.5	47.3
30'	2021-12-03 15:00:00	00:30:00	48.5	66.3	45.6	49.3	47.0
30'	2021-12-03 15:30:00	00:30:00	48.5	64.7	44.6	49.1	46.7
30'	2021-12-03 16:00:00	00:30:00	49.7	65.8	45.1	50.8	46.9
30'	2021-12-03 16:30:00	00:30:00	49.0	64.6	44.9	50.2	46.6

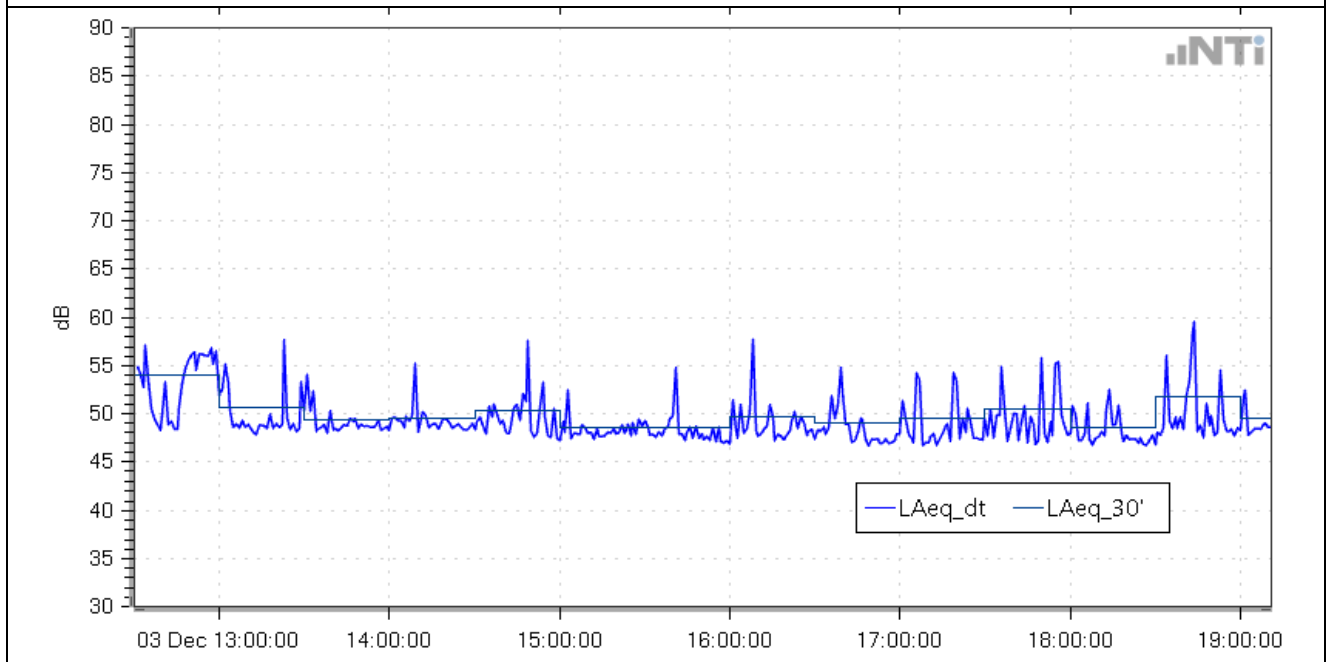


Figure 49: Measurements at Location 7 during a Day period.

### 5.7.2 Evening Location 7

Description of the noise climate: This noise monitoring location was well set back from any local road traffic noise sources. The noise climate at this location remained dominated by distant traffic noise which could clearly be heard. Car park use at this time would have been very light and only consisted of very occasional car park arrival and departure events.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 19:00:00	00:30:00	49.5	68.6	45.5	49.7	47.3
30'	2021-12-03 19:30:00	00:30:00	49.8	63.3	45.6	50.4	47.3
30'	2021-12-03 20:00:00	00:30:00	49.4	65.1	46.0	50.2	47.7
30'	2021-12-03 20:30:00	00:30:00	49.5	64.7	45.3	50.1	47.1
30'	2021-12-03 21:00:00	00:30:00	60.8	82.9	45.6	54.5	47.3
30'	2021-12-03 21:30:00	00:30:00	51.6	65.7	46.4	53.3	48.3
30'	2021-12-03 22:00:00	00:30:00	52.8	69.4	46.4	54.1	49.0
30'	2021-12-03 22:30:00	00:30:00	51.3	63.8	46.2	53.4	48.5

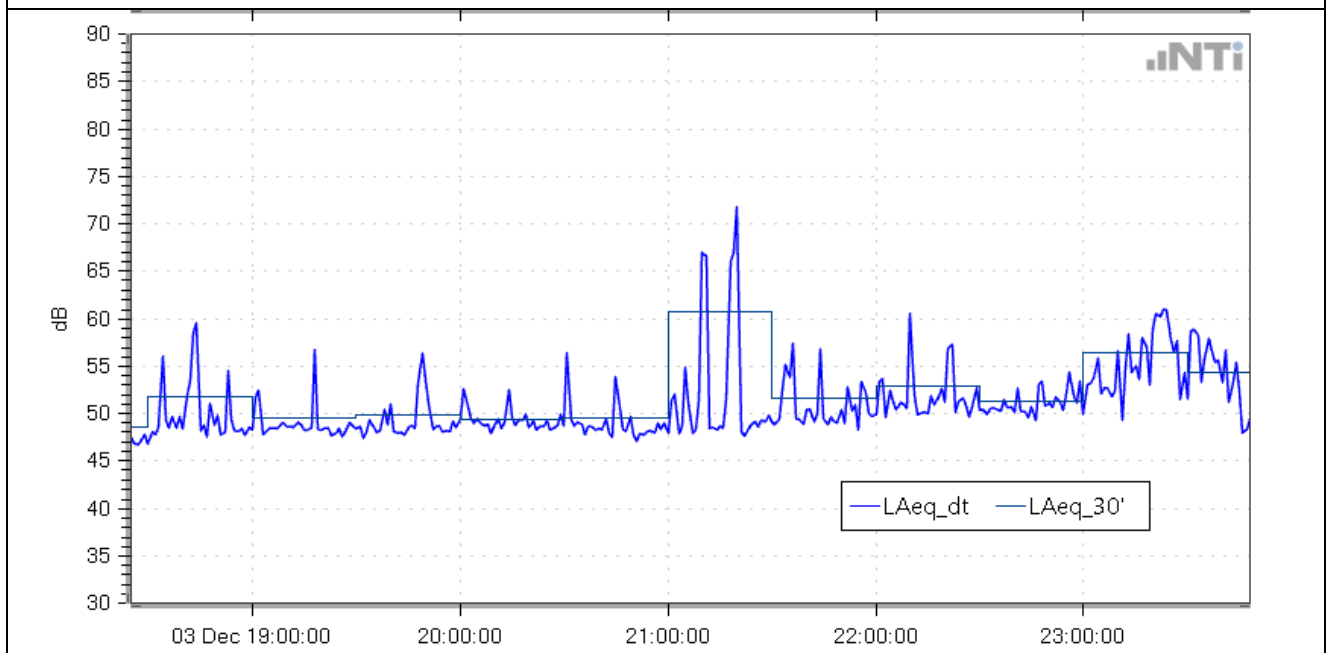


Figure 50: Measurements at Location 7 during an Evening period.

### 5.7.3 Night-time Location 7

Description of the noise climate: This noise monitoring location was well set back from any local road traffic noise sources. The noise climate at this location remained dominated by distant traffic noise, which could clearly be heard. Car park use at this time was at an absolute minimum with the exception of one user who entered the car park and left the car idling for a period of time before departing.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 23:00:00	00:30:00	56.4	69.3	45.4	60.1	48.5
30'	2021-12-03 23:30:00	00:30:00	54.4	68.3	44.5	58.1	47.2
30'	2021-12-04 00:00:00	00:30:00	52.5	63.7	43.5	56.0	47.4
30'	2021-12-04 00:30:00	00:30:00	55.2	73.5	45.4	58.4	49.2
30'	2021-12-04 01:00:00	00:30:00	56.7	70.3	44.7	60.0	50.4
30'	2021-12-04 01:30:00	00:30:00	55.6	72.3	45.0	59.1	48.8
30'	2021-12-04 02:00:00	00:30:00	54.4	69.0	42.1	57.9	47.5
30'	2021-12-04 02:30:00	00:30:00	50.8	66.0	40.7	53.8	44.9
30'	2021-12-04 03:00:00	00:30:00	51.8	65.9	40.8	55.3	45.3
30'	2021-12-04 03:30:00	00:30:00	53.6	65.3	42.4	57.2	46.8
30'	2021-12-04 04:00:00	00:30:00	54.9	67.2	42.5	58.4	48.3
30'	2021-12-04 04:30:00	00:30:00	55.9	76.7	44.7	59.4	49.0
30'	2021-12-04 05:00:00	00:30:00	55.4	69.5	42.9	59.2	47.6
30'	2021-12-04 05:30:00	00:29:09	57.0	73.3	43.4	60.5	48.6

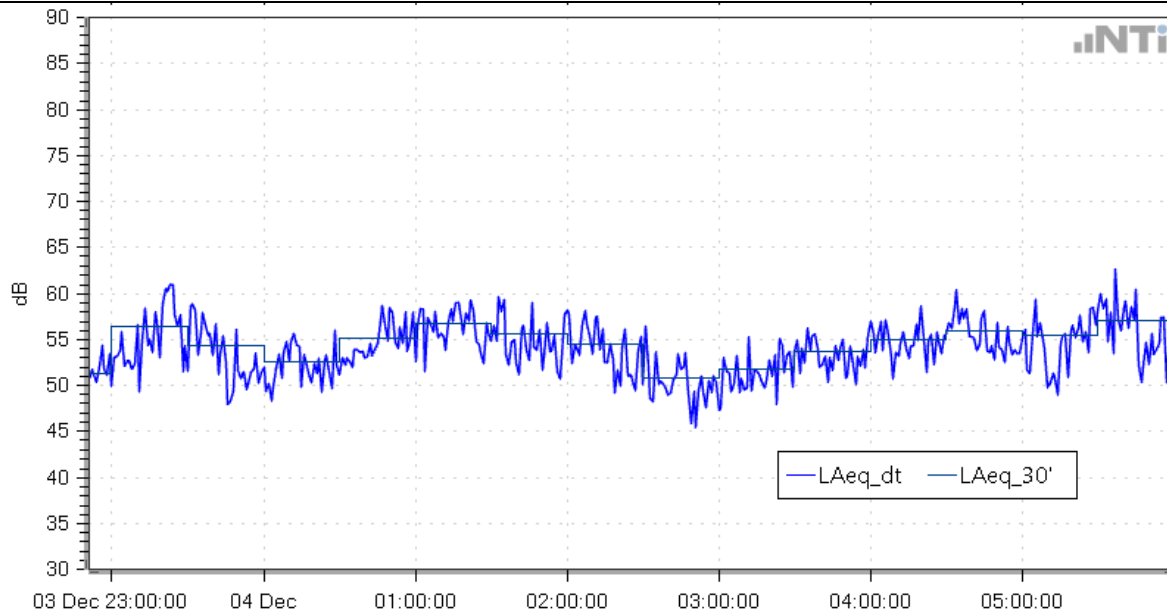


Figure 51: Measurements at Location 7 during a Night period

## 5.8 Location 8

### 5.8.1 Measurement Results for Daytime Location 8

File: 8  
 Location:8  
 Start time: 17:19hrs

Description of the noise climate: the noise climate at this location was dominated by noise from road traffic noise on Connacht Street. This location is also an entrance to a car park, and there were a number of vehicles that passed this measurement location during the survey period. Additionally, there was some conversational noise from pedestrians passing nearby. Other sources included noise from the bottle bins nearby being loaded in the area, which did result in a notable contribution at times when they were used. The sound level measurement was paused momentarily while a vehicle started and manoeuvred very close to the microphone.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 17:19:14</b>	<b>00:30:19</b>	<b>57.2</b>	<b>73.4</b>	<b>46.6</b>		
+ <b>-Pause (1)</b>		<b>00:00:20</b>	<b>57.2</b>	<b>65.2</b>	<b>51.3</b>	<b>59.5</b>	<b>53.6</b>
<b>Project Result</b>		<b>00:29:59</b>	<b>57.2</b>	<b>73.4</b>	<b>46.6</b>	<b>60.2</b>	<b>51.2</b>

Graph showing LAeq,dt

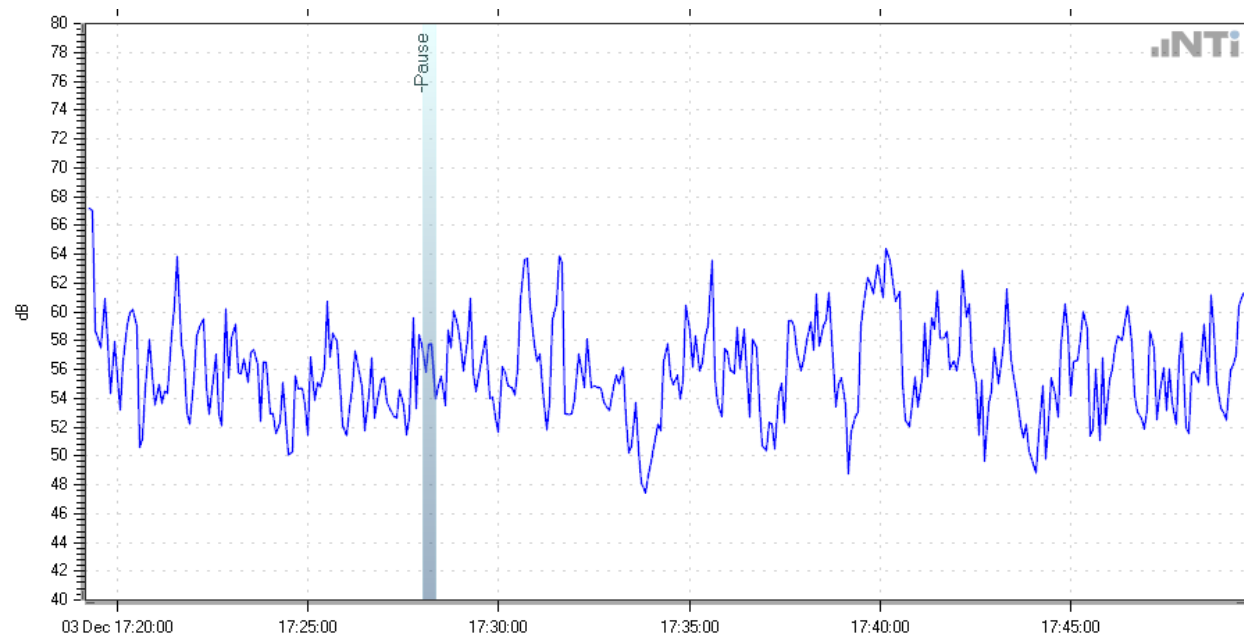


Figure 52: Measurements at Location 8 during a Daytime period.



File: 2  
 Location:8  
 Start time: 13:22 hrs

Description of the noise climate: the noise climate at this location was dominated by road traffic noise on Connaught Street. Other sources included noise from pedestrians passing by the location as well as noise from emergency vehicles in the area. In addition, there was a steady-state noise ever-present understood to be from kitchen extract fans in use at the nearby Eddie Rockets restaurant. This location is close to the Connaught Street/Phibsborough Road junction, and engine noise from queuing road traffic could be heard at times when there were tailbacks at the junction.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 13:22:46</b>	<b>00:30:00</b>	<b>59.4</b>	<b>82.6</b>	<b>49.7</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>59.4</b>	<b>82.6</b>	<b>49.7</b>	<b>61.4</b>	<b>53.6</b>

Graph showing LAeq,dt



Figure 53: Measurements at Location 8 during a Daytime period.

### 5.8.2 Measurement Results for Evening Location 8

File: 12  
 Location:8  
 Start time: 19:49 hrs

Description of the noise climate: the noise climate at this location was dominated by noise from road traffic noise on Connacht Street. There was a steady-state noise ever-present understood to be from kitchen extract fans in use at the nearby Eddie Rockets restaurant. Church bells were heard sounding at 20:00hrs. There was some light use of the bottle bins nearby which was noted at 20:03hrs.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 19:49:20</b>	<b>00:30:00</b>	<b>54.3</b>	<b>73.4</b>	<b>47.4</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>54.3</b>	<b>73.4</b>	<b>47.4</b>	<b>56.6</b>	<b>49.3</b>

Graph showing LAeq,dt

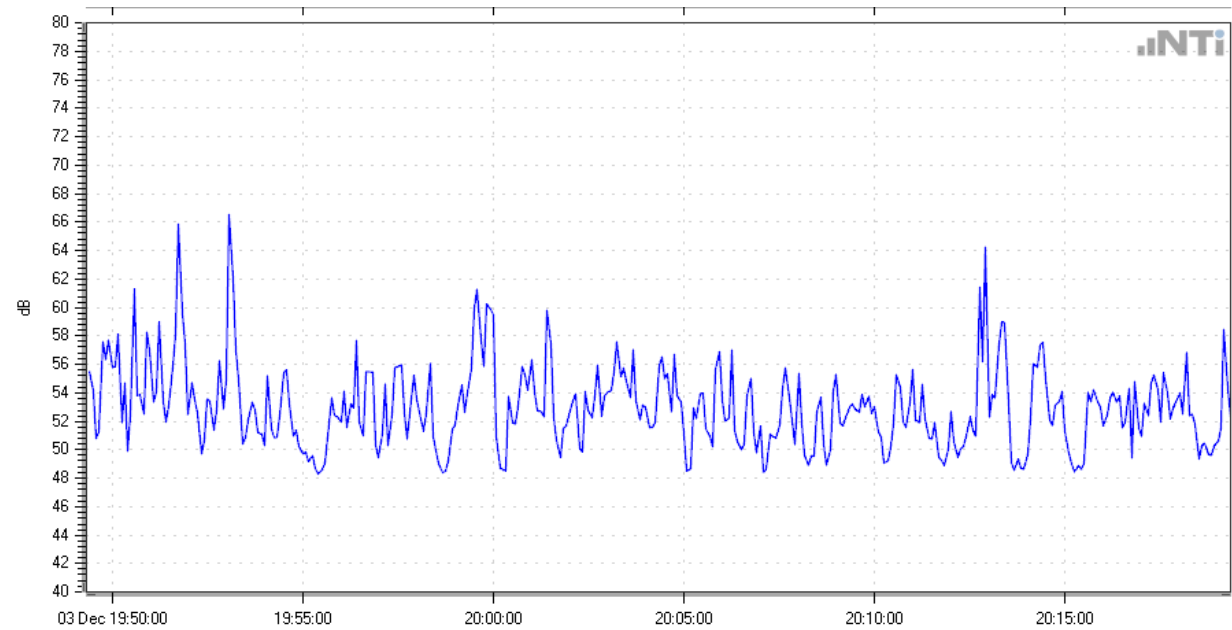


Figure 54: Measurements at Location 8 during an Evening period.

### 5.8.3 Measurement Results for Night-time Location 8

File: 19  
 Location:8  
 Start time: 22:55hrs

Description of the noise climate: the noise climate at this location was dominated by noise from road traffic noise on Connacht Street. There was a steady-state noise ever-present understood to be from kitchen extract fans in use at the nearby Eddie Rockets restaurant. Other sources included noise from pedestrians and youths conversing in the area. There was no noted use of the bottle bins at this time.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-03 23:55:16</b>	<b>00:30:00</b>	<b>52.4</b>	<b>72.6</b>	<b>43.2</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>52.4</b>	<b>72.6</b>	<b>43.2</b>	<b>55.5</b>	<b>46.3</b>

Graph showing LAeq,dt

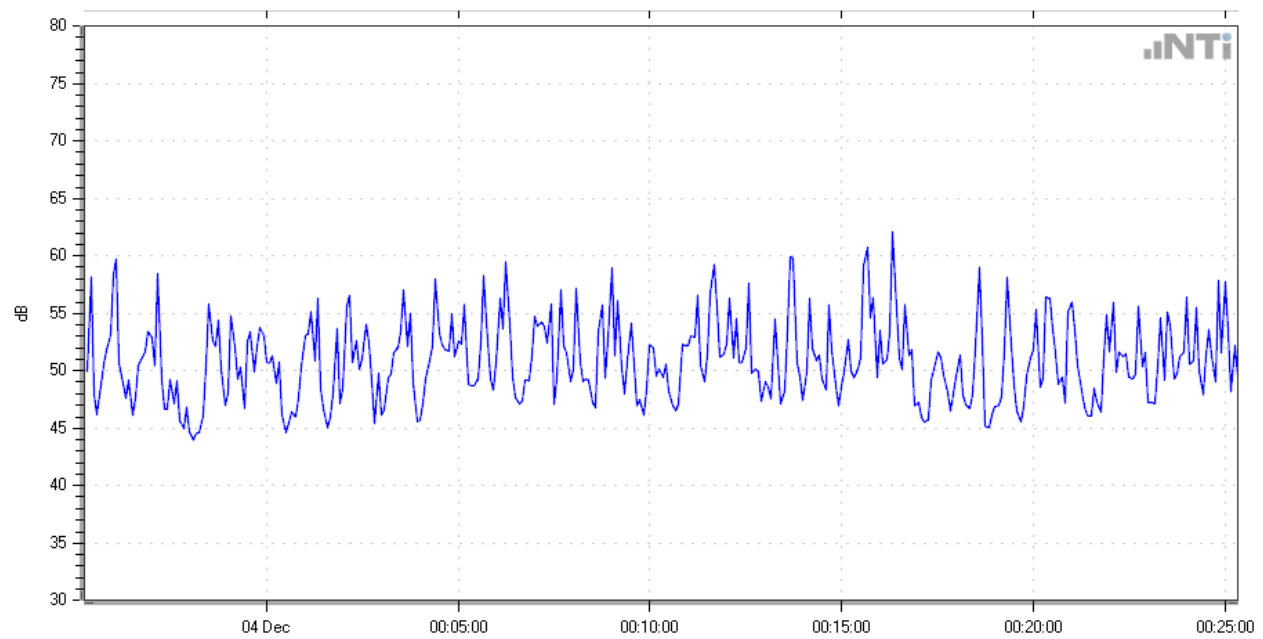


Figure 55: Measurements at Location 8 during a Night period.

File: 25  
 Location:8  
 Start time: 03:18hrs

Description of the noise climate: the noise climate at this location was dominated by road traffic noise on Connacht Street. Road traffic noise had fallen considerably at this time. The kitchen extract fan, which was audible in earlier measurements, was not running at this time.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
<b>Recorded</b>	<b>2021-12-04 03:17:38</b>	<b>00:30:00</b>	<b>50.4</b>	<b>67.1</b>	<b>41.1</b>		
<b>Project Result</b>		<b>00:30:00</b>	<b>50.4</b>	<b>67.1</b>	<b>41.1</b>	<b>53.0</b>	<b>44.7</b>

Graph showing LAeq,dt

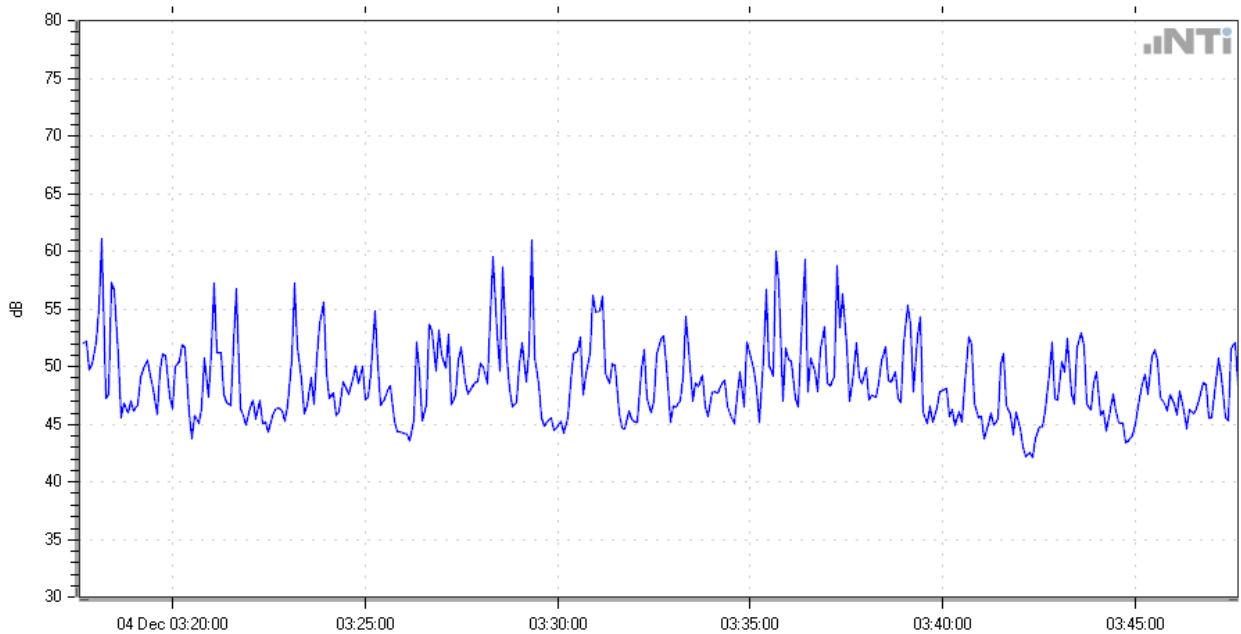


Figure 56: Measurements at Location 8 during a Night period.

## 5.9 Location 9

### 5.9.1 Daytime Location 9

Description of the noise climate: The noise climate at this location was dominated by distant traffic noise. There was some occasional local noise from vehicles and pedestrians conversing in the area, however, it was infrequent. Other sources included birdsong and some light activity from cars entering the car park nearby. The location, however, remains dominated by road traffic noise from the R108 Phibsborough Road and R147 Cabra Road. Other sources included emergency vehicles which were audible in the distance.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 12:00:00	00:13:48	54.8	77.2	46.0	54.8	48.4
30'	2021-12-03 12:30:00	00:30:00	54.9	79.0	45.4	54.1	47.4
30'	2021-12-03 13:00:00	00:30:00	54.0	78.2	44.4	54.9	46.5
30'	2021-12-03 13:30:00	00:30:00	53.8	79.5	43.7	51.2	46.3
30'	2021-12-03 14:00:00	00:30:00	51.8	76.3	44.1	52.6	46.9
30'	2021-12-03 14:30:00	00:30:00	51.6	74.1	44.8	52.1	46.6
30'	2021-12-03 15:00:00	00:30:00	49.9	69.3	43.6	50.9	46.7
30'	2021-12-03 15:30:00	00:30:00	54.3	80.6	43.2	51.5	46.3
30'	2021-12-03 16:00:00	00:30:00	50.8	73.0	42.7	50.8	45.5
30'	2021-12-03 16:30:00	00:30:00	54.3	79.3	42.8	50.3	44.8

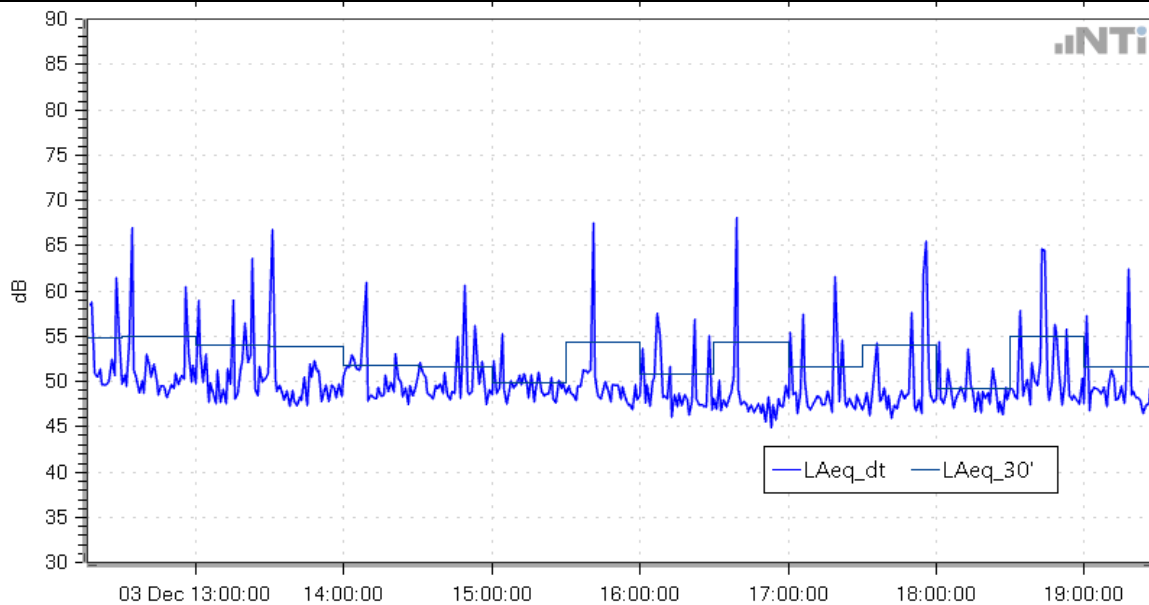


Figure 57: Measurements at Location 9 during a Daytime period.

### 5.9.2 Evening Location 9

Description of the noise climate: The noise climate at this location was dominated by distant traffic noise. The location however remains dominated by road traffic noise from the R108 Phibsborough Road and R147 Cabra Road. Other sources included emergency vehicles which were audible in the distance.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 19:00:00	00:30:00	51.6	73.6	44.3	50.6	46.3
30'	2021-12-03 19:30:00	00:30:00	51.0	69.0	43.8	51.3	46.3
30'	2021-12-03 20:00:00	00:30:00	50.8	72.5	44.7	51.4	46.9
30'	2021-12-03 20:30:00	00:30:00	50.7	71.1	44.1	52.4	46.5
30'	2021-12-03 21:00:00	00:30:00	52.0	71.4	44.2	52.7	46.6
30'	2021-12-03 21:30:00	00:30:00	56.7	81.4	45.7	53.7	47.8
30'	2021-12-03 22:00:00	00:30:00	52.9	73.9	45.9	53.2	48.4
30'	2021-12-03 22:30:00	00:30:00	50.7	65.5	44.8	52.5	48.1

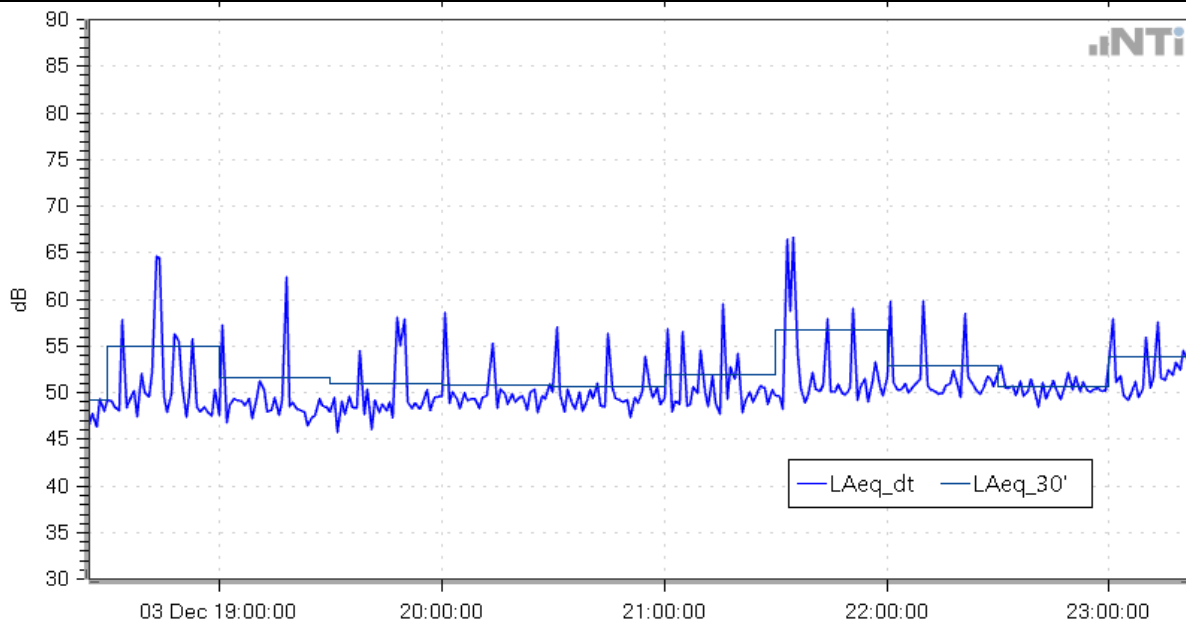


Figure 58: Measurements at Location 9 during an Evening period.

### 5.9.3 Night Location 9

Description of the noise climate: The noise climate at this location was dominated by distant traffic noise. Although traffic noise had fallen considerably at this time, the location however remains dominated by roads traffic noise from the R108 Phibsborough Road and R147 Cabra Road. Other sources included emergency vehicles which were audible in the distance. Distant road traffic noise had fallen to a minimum at 03:00hrs and then started to build again at 04:00hrs.

Type	Start	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L 10.0 % [dB]	L 90.0 % [dB]
30'	2021-12-03 23:00:00	00:30:00	53.9	76.1	45.8	54.5	48.6
30'	2021-12-03 23:30:00	00:30:00	50.9	62.3	43.5	53.1	47.4
30'	2021-12-04 00:00:00	00:30:00	50.1	59.9	44.6	52.1	47.4
30'	2021-12-04 00:30:00	00:30:00	51.4	66.9	45.7	52.9	48.5
30'	2021-12-04 01:00:00	00:30:00	52.1	66.5	45.6	54.2	49.0
30'	2021-12-04 01:30:00	00:30:00	51.3	68.5	43.2	53.3	48.0
30'	2021-12-04 02:00:00	00:30:00	49.1	61.0	41.6	51.2	45.8
30'	2021-12-04 02:30:00	00:30:00	47.9	59.6	40.4	50.4	44.0
30'	2021-12-04 03:00:00	00:30:00	47.1	58.0	39.8	49.6	43.1
30'	2021-12-04 03:30:00	00:30:00	48.1	59.9	41.2	50.4	44.7
30'	2021-12-04 04:00:00	00:30:00	49.8	60.3	42.2	52.3	46.2
30'	2021-12-04 04:30:00	00:30:00	49.9	65.5	42.4	52.3	46.1
30'	2021-12-04 05:00:00	00:30:00	49.6	62.9	41.1	52.3	44.7
30'	2021-12-04 05:30:00	00:03:51	51.7	64.4	45.2	53.4	49.1

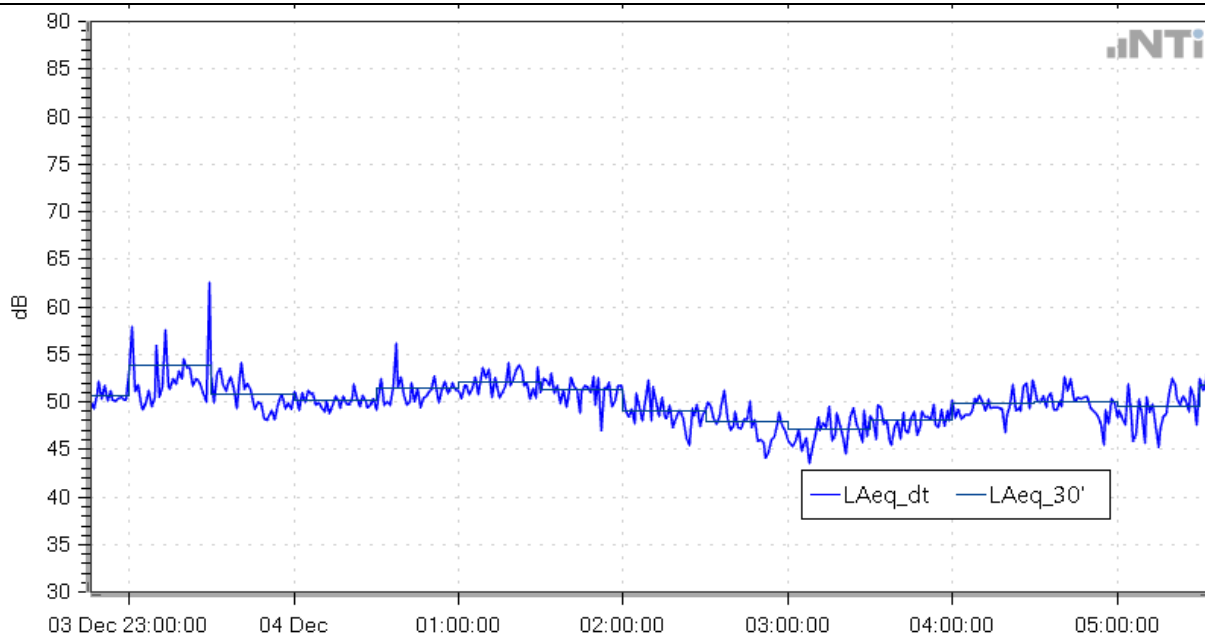


Figure 59: Measurements at Location 9 during a Night period.

## 6 Concluding Remarks

A comprehensive baseline noise study has been completed at Dalymount Park, Phibsborough, Dublin. This report records ambient measurement noise levels at the facility during a match fixture date as well as measurements on a day where there was no match taking place.

The monitoring was carried out at times and locations as specified by Dublin City Council and its agent and agreed in advance of the survey.

Representative ambient noise levels were determined during daytime, evening and night-time hours on non-match days. Measurements were made at the same locations during hours when a match was being played.

The tables of measurements in chapters 4 and 5 above provide detailed information on ambient noise levels in the vicinity of Dalymount Park. In addition, Table 1 below provides a comparative summary of measured ambient noise at the specified monitoring points on non-match days at times equivalent to times when a match is being played and noise levels when a match is being played.

Location	Non-match Day		Match Day		Comment
	LAeq, 30 min	LA90, 30 min	LAeq, 30 min	LA90, 30 min	
1	68.8	58.8	67.3	58.9	
2	60.9	45.8	61.3	51.6	Supporters audible
3	59.2	46	60.2	52.7	Cheering audible
4	67.8	58.6	70.2	59.6	Crowds noise not noticed
5	50.7	44.8	79	67.8	Elevated supporter noise & PA music
6	51.9	45	60.5	52.7	Consistent cheering & noise of hot dog stand generator
7	51.6	48.3	78.2	64.5	Consistent cheering & PA music
8	54.3	49.3	57.5	51.4	Supporters audible & music
9	50.7	46.5	69.7	57.7	Supporters clearly audible

**Table 1 – Comparative measurements of ambient and background noise levels for non-match and match days**

As a result of the noise monitoring exercise conducted in the vicinity of the Dalymount Stadium, it is evident that the noise climate in this locality is dominated by road traffic noise, principally from the Phibsborough and Cabra Roads, which are busy at all times. Residents in Connaught Street and St Peter's Road are also exposed to traffic noise but not to such a great extent.

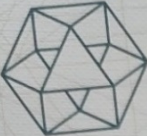
The monitoring results indicate that during match events, the occupants of houses that do not back on to the Stadium are exposed to a slight increase in noise due to spectator noise. In contrast, the occupants of houses that back on to the Stadium are exposed to appreciably elevated levels of noise from spectators and music being played through the PA system in the Stadium.



It should be mentioned that at one location, Location 6, the level of noise was consistently higher both before and during the match due to the noise from a petrol generator being used at a hot dog stand in the vicinity. It may be appropriate to consider potential noise from food stands and appropriate mitigation measures in the redevelopment of the Stadium.

## 7 Appendix A: Instrument Calibration Certification

### 7.1 Logging Type Approved Measurement Instrument SLM1 (S/N: A2A-10976-E0)

 **NSAI**  
National Metrology Laboratory

### Certificate of Calibration

Issued to **ICAN Acoustics**  
9 St. Mary's Road  
Galway City  
Co. Galway

Attention of **Diarmuid Keaney**

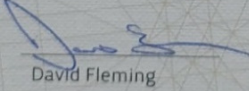
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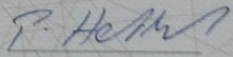
Certificate Number **214146**  
Item Calibrated **NTi Audio XL2-TA Sound Level Meter with NTi Audio MC230A Microphone**  
Serial Number **A2A-10976-E0 (SLM) and A14398 (Microphone)**  
ID Number **None**  
Order Number **Diarmuid Keaney**  
Date Received **11 Oct 2021**  
NML Procedure Number **AP-NM-09**

Method **The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).**

Calibration Standards **Norsonic 1504A Calibration System incorporating:  
SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022]  
Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022]  
B&K 4134 Measuring Microphone, No. 0744 [Cal Due Date: 03 Jun 2023]  
B&K 4228 Pistonphone, No. 0740 [Cal Due Date: 04 Jun 2023]  
B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 07 Oct 2022]**


---

Calibrated by   
David Fleming

Approved by   
Paul Hetherington

Date of Calibration **20 Oct 2021**

Date of Issue **20 Oct 2021**

 This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see [www.bipm.org](http://www.bipm.org))

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Glasnevin | Dublin 11 | Ireland T+ 353 1 808 2609 | F+353 1 808 2603 | NSAI.ie

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## 7.2 Logging Type Approved Measurement Instrument SLM2 (S/N A2A-16940-E0)

	<b>NSAI</b> National Metrology Laboratory		
<h3>Certificate of Calibration</h3>			
Issued to	ICAN Acoustics 9 St. Mary's Road Galway City Co. Galway		
Attention of	Diarmuid Keaney		
Certificate Number	214147		
Item Calibrated	NTi Audio XL2-TA Sound Level Meter with NTi Audio MC230A Microphone		
Serial Number	A2A-16940-E0 (SLM) and 9261 (Microphone)		
ID Number	None		
Order Number	Diarmuid Keaney		
Date Received	11 Oct 2021		
NML Procedure Number	AP-NM-09		
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), <i>Periodic tests, specification for the verification of sound level meters</i> . This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).		
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR D5360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0744 [Cal Due Date: 03 Jun 2023] B&K 4228 Pistonphone, No. 0740 [Cal Due Date: 04 Jun 2023] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 07 Oct 2022]		
Calibrated by	 David Fleming	Approved by	 Paul Hetherington
Date of Calibration	20 Oct 2021	Date of Issue	20 Oct 2021
	This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see <a href="http://www.bipm.org">www.bipm.org</a> )		
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7.3 Logging Type Approved Measurement Instrument SLM3 (S/N A2A-11106-E0)




## CALIBRATION CERTIFICATE

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**Date of issue:** 14-08-2020      **Certificate No:** 14015869      **Page:** 1/6

<b>OBJECT OF CALIBRATION</b>	Manufacturer: <b>NTi</b> Model: <b>XL2-TA</b> Serial No.: <b>A2A-11106-E0</b> Description: <b>Sound Level Meter</b>	
<b>SENSOR</b>	Manufacturer: <b>NTi</b> <b>NTi</b> Model: <b>MC230A</b> <b>MA220</b> Serial No.: <b>A14398</b> <b>6972</b> Description: <b>Microphone</b> <b>Preamplifier</b>	
<b>APPLICANT</b>	ICAN Acoustics Ltd 9 St Marys Rd, Galway City, Ireland	
<b>ENVIRONMENTAL CONDITIONS</b>	Temperature:      22.4 – 22.9      °C Humidity:      59.0 – 62.1      % Pressure:      100.34 – 100.43      kPa	
<b>DATE OF CALIBRATION</b>	14-08-2020	
<b>APPROVED BY</b>	B. Hunt	



AcSoft Calibration | Bedford Technology Park  
 Thurleigh | Bedford | MK44 2YA  
 +44 (0) 1234 639550  
 www.acsoft.co.uk

---

This calibration was performed on behalf of Svantek UK by AcSoft Calibration.  
 AcSoft Calibration is a trading name of AcSoft Ltd, Bedford Technology Park, Thurleigh, Bedford, MK44 2YA.

## 7.4 Logging Type Approved Measurement Instrument SLM4 (S/N A2A-10298-E0)



### Manufacturer Calibration Certificate

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The following instrument has been tested and calibrated to the manufacturer specifications.  
The calibration is traceable in accordance with ISO/IEC 17025 covering all instrument functions.

- Device Type: **M2230 Measurement Microphone**  
consisting of  
MA220            Serial Number: 10298  
Capsule           Serial Number: A21587

- Certificate Issued: **29 October 2021**
- Certificate Number: **44498-10298-M2230**
- Results: **PASSED**  
(for detailed report see next page)

---

Tested by: M.Frick

Signature:

Stamp:

A handwritten signature in black ink is written over a rectangular stamp. The stamp contains the text: 'NTI Audio AG', 'Im alten Riet 102', 'LI 9494 Schaan', and 'www.nti-audio.com'.

**NTI Audio AG**  
Im alten Riet 102  
LI 9494 Schaan  
www.nti-audio.com

## 7.5 Field Calibration Unit (CAL1)



**NSAI**  
National Metrology Laboratory

### Certificate of Calibration

Issued to ICAN Acoustics  
9 St. Mary's Road  
Galway City  
Co. Galway

Attention of Diarmuid Keaney

---

Certificate Number 214145  
Item Calibrated Bruel & Kjaer Type 4231 Sound Level Calibrator  
Serial Number 2499109  
ID Number None  
Order Number Diarmuid Keaney  
Date Received 11 Oct 2021  
NML Procedure Number AP-NM-13

Method The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity (half-inch configuration). The calibrator's operating frequency was also measured.

Calibration Standards Norsonic 1504A Calibration System incorporating:  
Agilent 34401A Digital Multimeter, File No. 0736 [Cal due: 10 Jun 2022]  
B & K 4134 Measuring Microphone, File No. 0744 [Cal due: 03 Jun 2023]  
B & K 4228 Pistonphone, File No. 0740 [Cal due: 04 Jun 2023]

---

Calibrated by   
David Fleming

Approved by   
Paul Hetherington

Date of Calibration 19 Oct 2021

Date of Issue 19 Oct 2021

 This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see [www.bipm.org](http://www.bipm.org))

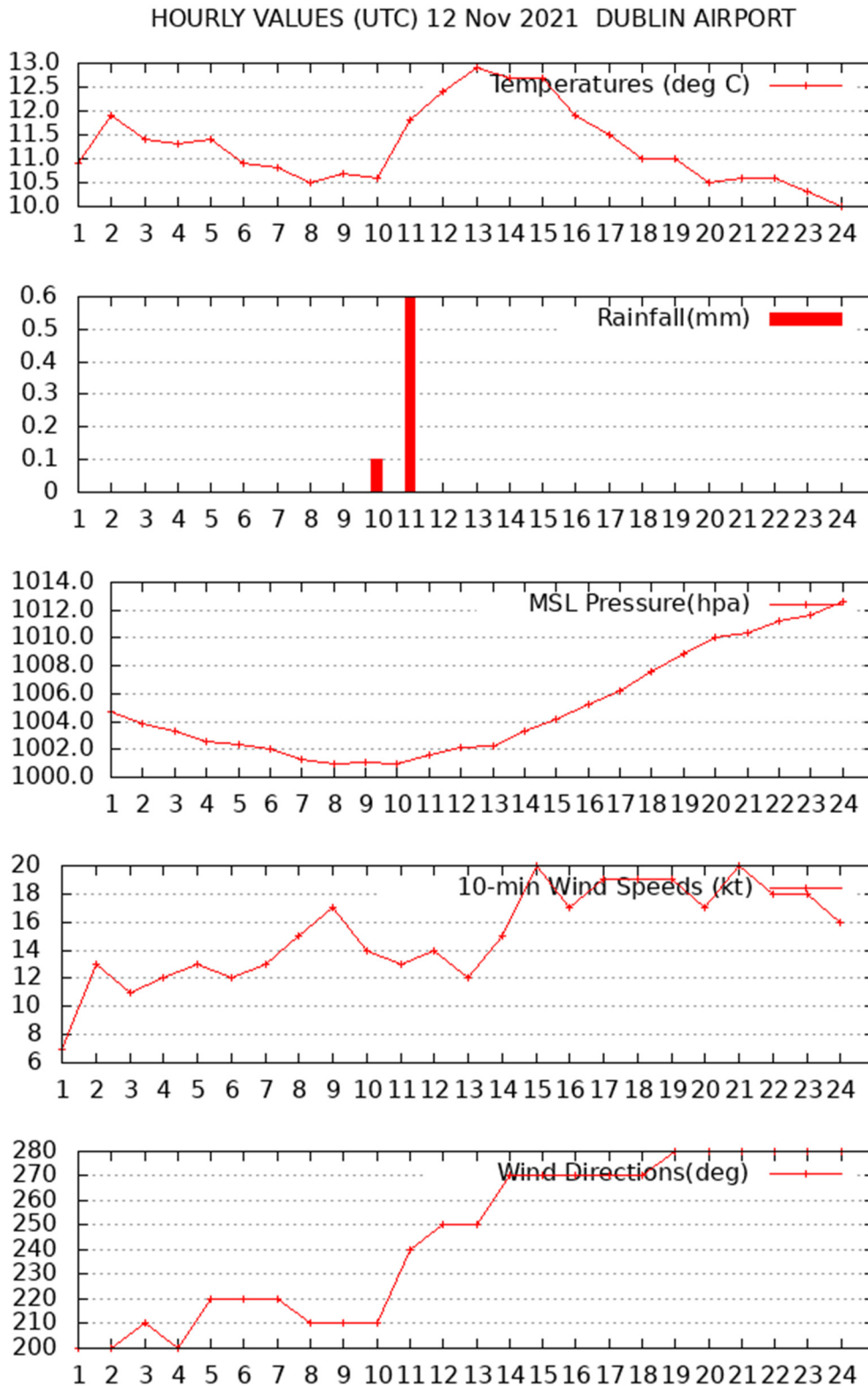
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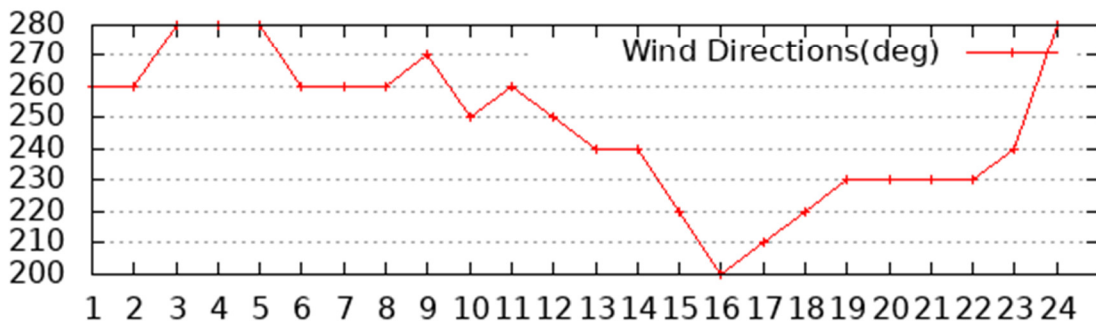
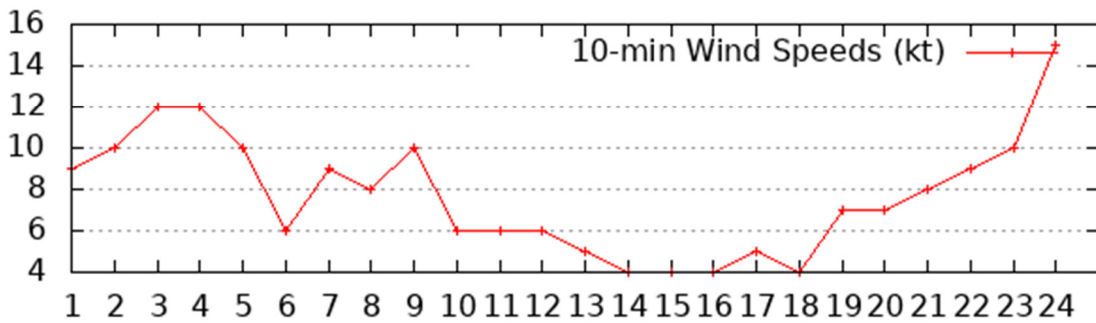
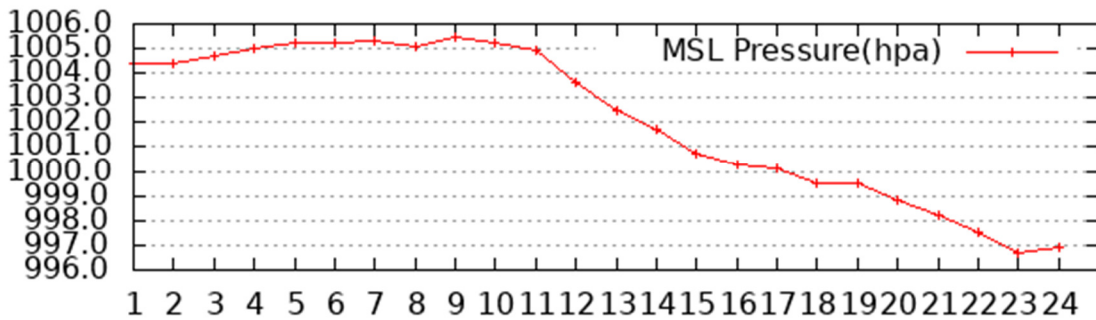
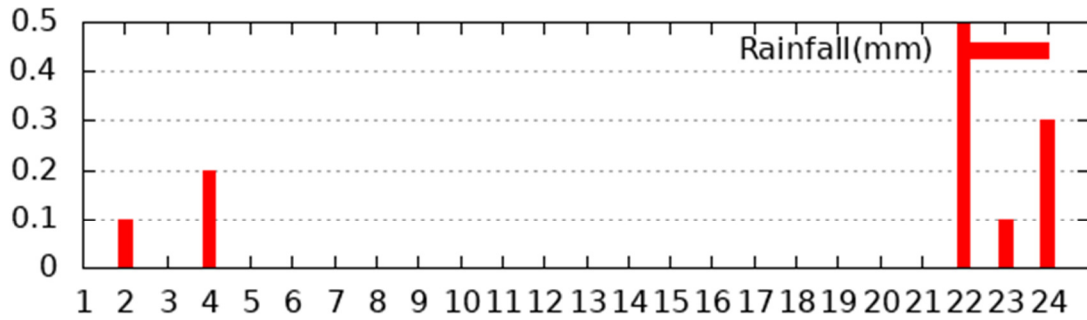
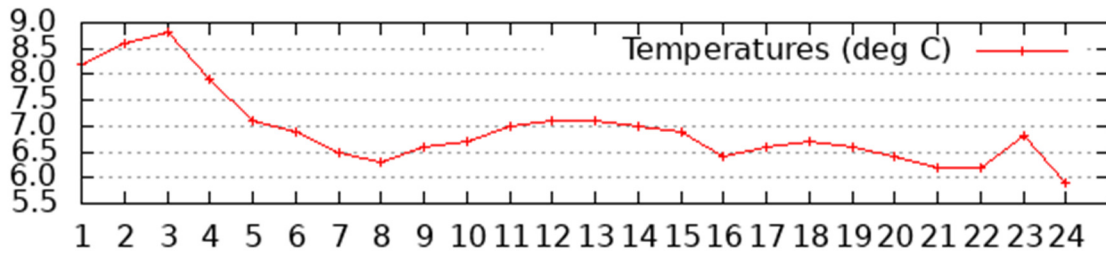
## 8 Appendix B: Weather measured on site

### 8.1 Weather On Match Day (12<sup>th</sup> November 2021)



## 8.2 Non-Match Day (3<sup>rd</sup> December 2021)

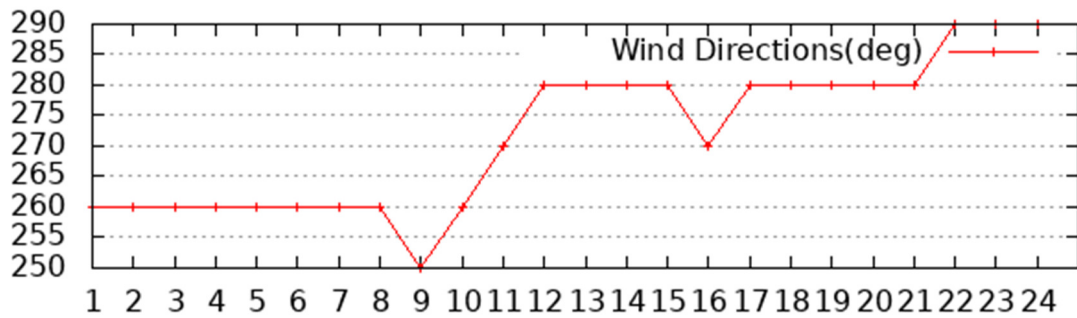
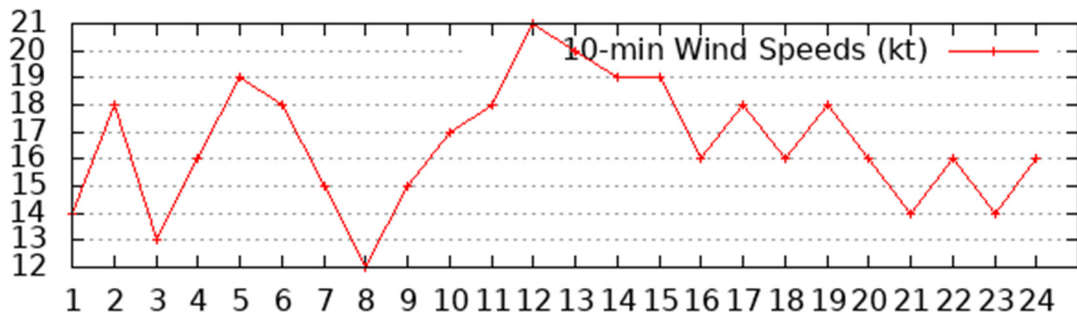
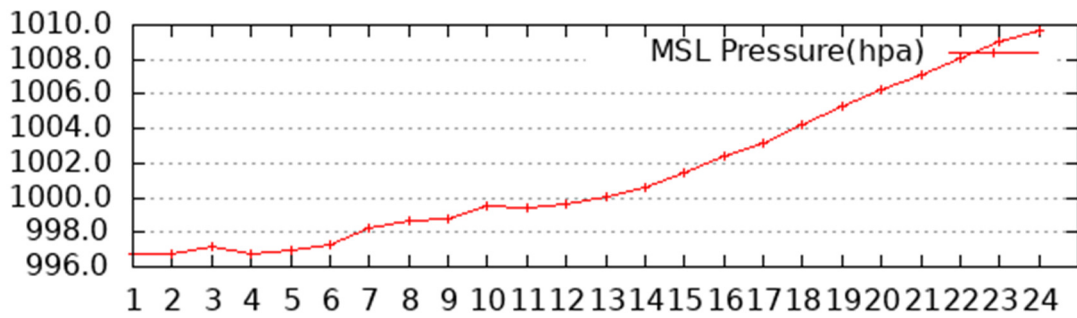
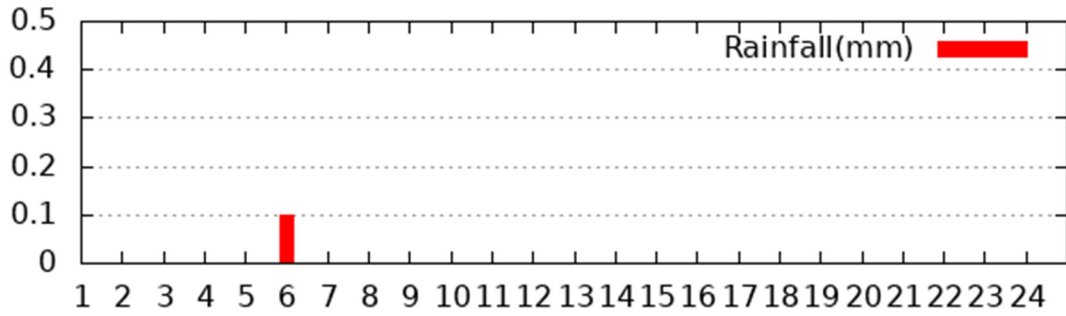
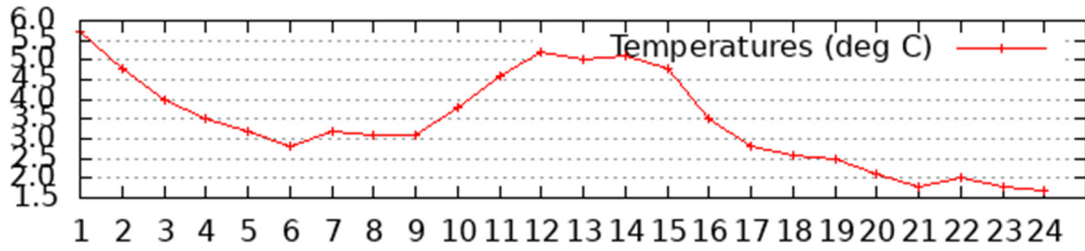
HOURLY VALUES (UTC) 03Dec2021 DUBLIN AIRPORT





### 8.3 Non-Match Day (4th December 2021)

HOURLY VALUES (UTC) 04Dec2021 DUBLIN AIRPORT



## 9 Appendix C: Terminology

**Decibel (dB):** A decibel is a unit of level, which denotes the ratio between two quantities that are proportional to the power; the number of decibels corresponding to the ratio of two powers is ten times the logarithm to the base 10 of this ratio.

**dB(A):** A-weighted sound pressure level (SPL) approximately equivalent to the human ear frequency response to noise.

The "A" suffix denotes that the sound levels have been "A-weighted" to account for the non-linear frequency response of human hearing. All sound levels in this report are expressed in terms of decibels (dB) relative to  $2 \times 10^{-5}$  Pa.

### **Equivalent Continuous (A) Weighted Sound Level [ $L_{AeqT}$ ]:**

This can be regarded as a notional level, which would, in the course of the measuring period (T), cause the same (A) weighted sound energy to be received as that due to the actual sound over the actual measuring period.

### **LAFMax**

The maximum of the sound pressure levels recorded of a measurement period with 'A' frequency weighting'. The 'F' denotes a fast sampling rate relating to the speed at which the instrument samples the noise being measured.

### **LA10**

The percentile sound pressure level exceeded 10% of the measurement period with 'A' frequency weighting calculated by statistical analysis.

### **LA90**

The percentile sound pressure level exceeded 90% of the measurement period with 'A' frequency weighting calculated by statistical analysis. This is a term used to measure the background noise level in an area.

**Hertz (Hz):** The unit of frequency equivalent to one cycle per second.