



EESL-GTRN-REP-006 Leete Place Validation Post-PA Adjustment

Revision History			
Version	Name	Date	Changes
01	Alessandro Anelli	10/09/2025	First report
02	Alessandro Anelli	12/09/2025	Implemented feedback from reviewer
03	Alessandro Anelli	12/09/2025	Included reference to previously released report
04	Alessandro Anelli	01/10/2025	Amended report in-line with GTR requirements

Reviewal			
	Author	Checked	Approved
Name	Alessandro Anelli	Francesca Gonnella	Francesca Gonnella
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Contents

1	Terms & Acronyms	3
2	Executive Summary	4
3	Introduction	5
4	Methodology/Approach	6
5	Results.....	6
6	Analysis	7
7	Conclusion	7

1 Terms & Acronyms

Term	Definition
AFFL (Above Finished Floor Level)	Measurement height reference. Indicates the height of a microphone or equipment above the finished floor surface.
Ambient Noise Level	The overall background sound pressure level in a given environment.
A-Weighted (dB(A))	A weighting of sound pressure levels (SPLs) that accounts for the sensitivity of the human ear to different frequencies.
Decibel (dB)	A logarithmic unit used to measure sound levels, comparing a sound pressure against a reference value.
LAeq	Equivalent continuous sound level over a given period, A-weighted. Represents the average noise exposure, accounting for fluctuations.
LAFmax	The maximum A-weighted sound level measured with a "fast" time constant (125 ms). Captures short, distinct peaks such as horns.
SPL (Sound Pressure Level)	The change in local air pressure caused by a sound wave, expressed in decibels (dB).

2 Executive Summary

To support Govia Thameslink Railway (GTR) at Royston Station with their public address (PA) system, further monitoring was commissioned to verify potential noise impacts of manual announcements at the nearby residential location (Leete Place). This followed PA system adjustments made by GTR following the release of report 'EESL-GTRN-REP-004 - Royston Station System Settings Testing 10-06-25 & 19-06-25'.

A scenario was assessed with manual announcements made via both the station microphone and roaming microphone. The utilisation of both the station and roaming microphones enabled a direct comparison of manual announcement levels between the two, as well as against the ambient noise at Leete Place and general rail-related noise generated at Royston station.

Findings from previous monitoring found that the highest manual announcement noise levels came from the pre-existing speakers in the middle of Platform 2, and near the station entrance, towards Speaker 1. In contrast, this monitoring exercise focused only on the impact of the new extension speakers (8, 9 and 10) and their impact on Leete Place. Measurements were taken from the closest practicable point at Leete Place (Figures 1 & 3), positioned between Speakers 8 and 9, and aligned with the end of the back gardens of the nearest houses. Since access to residential properties was not possible, this location was chosen as the most suitable and representative monitoring location.

Station and roaming microphone settings were set by GTR to within the previously recommended ranges, with the station microphone set at +2 and the roaming microphone at +5. Ambient noise levels at Leete Place were 48.9 LAeq dB(A). Below is a summary of findings in Table 1.

Table 1: Summary of key findings.

Noise Source	LAeq dB(A)	Key Observations
Ambient (Leete Place)	48.9	Baseline noise level at residential location recorded during monitoring period.
Station Microphone	52.8	Slightly above ambient.
Roaming Microphone	50	Comparable to ambient.
Combined Average Train Activity (arriving, passing, idling, departing)	63.9	Dominant rail-related noise source at Leete Place.

Overall, the results demonstrate that manual announcements, made with both the station and roaming microphone, were similar to existing ambient noise levels at Leete Place on the day, while train activity remained the dominant source of noise. Automated announcements were not audible during the monitoring, consistent with previous findings, as their levels and settings have not been altered.

3 Introduction

Following adjustments to the public address (PA) system and manual announcement levels at Royston Station, a noise monitoring exercise was undertaken to assess potential impacts of the platform 2 extension speakers, specifically 8, 9 and 10 in figure 2, at Leete Place. Measurements were taken from the closest practicable point at Leete Place, positioned between Speakers 8 and 9 and aligned with the end of the back gardens of the nearest houses.



Figure 1: Microphone set up location at Leete Place (between and behind speakers 8 & 9).

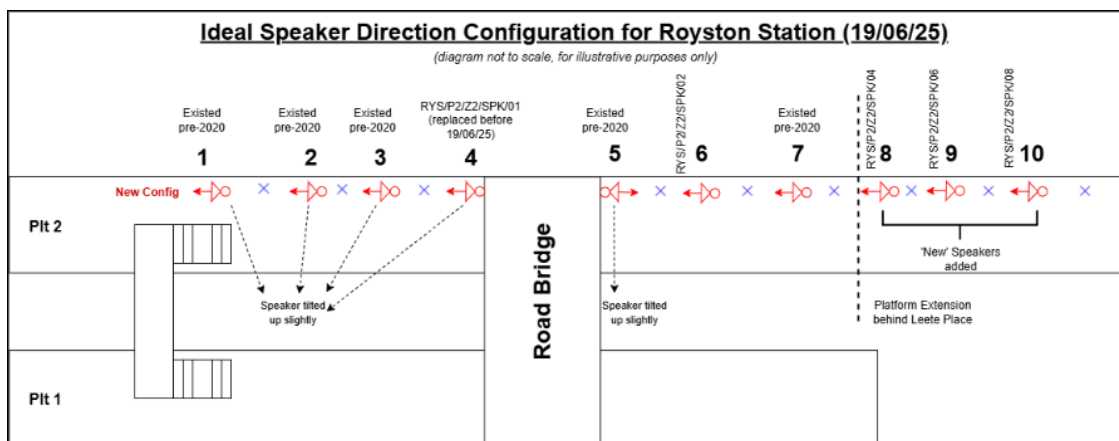


Figure 2: Speaker directionality and configuration at Royston Station (from the 19/06/25 report).

4 Methodology/Approach

Noise monitoring was undertaken at Leete Place on 5 September 2025. Measurements were taken from a fixed position between Speakers 8 and 9 (closer to Speaker 8), aligned with the back gardens of the nearest houses to Platform 2. This location was selected as the most suitable point, comparative to the residential properties, as access within the residences themselves was not possible. It was also midway along the platform extension. The NTI XL3 SPL Meter microphone was mounted to an all-terrain tripod and set to 1.5m above finished floor level (AFFL), as seen in Figure 3.

Manual announcements were delivered using the station microphone (set at +2) and a roaming 'Teleque' microphone (set at +5), all within the previously recommended gain ranges. Ambient noise levels and rail-related activity (such as train arrivals, departures, idling and pass-throughs) were also recorded at Leete Place for comparison throughout the monitoring period for post-monitoring analysis.



Figure 3: Microphone set up at Leete Place, behind Platform 2 extension.

5 Results

Below are tables containing the results from the monitoring exercise. The train activities and noise events are further separated into specific operations of the passing trains. All manual announcements, train activity and general ambient noise have been taken from the fixed location at Leete Place in Figures 1 & 3.

Table 2: Manual announcements against Leete Place ambient in both speaker operation scenarios.

Station Mic LAeq dB(A)	Roaming Mic LAeq dB(A)	Ambient Leete Place LAeq dB(A)
52.8	50	48.9

Table 3: Train activity near and past monitoring microphone, recorded from Leete Place.

Train Activity (near mic)	LAeq dB(A)
Arriving	63.9
Passing (non-stop)	71.9
Idling	54.3
Departing	65.1

6 Analysis

The monitoring results show that manual announcements, whether they were made with the station or roaming microphone, were within + 3.9 LAeq dB(A) of ambient noise levels at Leete Place. The variation from ambient levels may have been due to differences in announcement technique and vocal characteristics of announcers, as two individuals delivered the manual announcements during the exercise.

While the station microphone produced a larger increase in LAeq dB(A) noise levels compared to the roaming microphone (+2.8 dB(A) compared to roaming microphone), overall LAeq dB(A) values remained lower than those relating to train activity. Additionally, the roaming microphone only demonstrated a dB(A) increase of 1.1 LAeq dB(A) above the ambient recorded at Leete Place during the monitoring period.

Train movements were confirmed as the dominant noise source, with pass-throughs, arrivals and departures all generating higher LAeq dB(A) levels than manual announcements. This further supports earlier findings that train activity is the primary contributor to rail-related noise exposure at Leete Place.

7 Conclusion

Overall, the results from the monitoring exercise undertaken at Leete Place on 5 September 2025 indicate that the average noise levels experienced behind the extension of Platform 2 at Royston Station, when a manual announcement is made, are in line with the ambient noise levels experienced at Leete Place.

Train activity remained the dominant noise source, with arrivals, departures, idling, and non-stop pass-throughs producing levels above those recorded from manual announcements and ambient. Automated announcements were not audible during the exercise, consistent with previous findings, as their levels and settings have not been altered. These results suggest that following the adjustments made to speaker directionality and manual announcement input settings, manual announcements from the Platform 2 extension are unlikely to increase residential noise exposure by a significant amount.