



NOISE IMPACT ASSESSMENT

4 WHITTINGTON ROAD, LONDON N22

KIKS GROUP LTD

APRIL 2026

NOISE IMPACT ASSESSMENT

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REVISION HISTORY

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1 INTRODUCTION

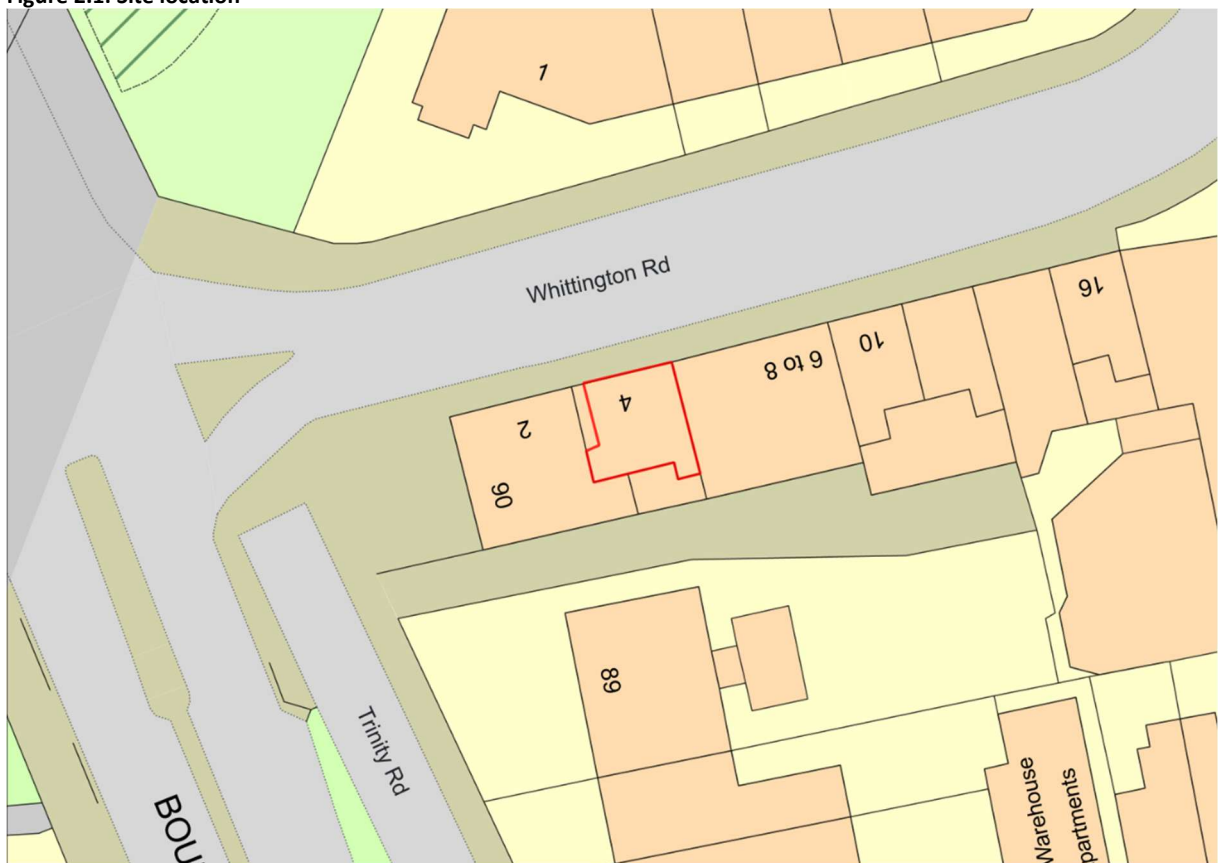
Anderson Acoustics Ltd was commissioned by KIKS Group Ltd in March 2025 to provide a noise and vibration impact assessment to discharge a planning condition relating to a residential development comprising the conversion of a ground floor commercial unit to provide a single dwelling.

The scheme was granted planning consent under Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) - Schedule 2, Part 3, Class MA where a planning condition relating to noise and vibration impacts is attached to the decision notice (ref.: HGY/2026/0163).

2 SITE DESCRIPTION

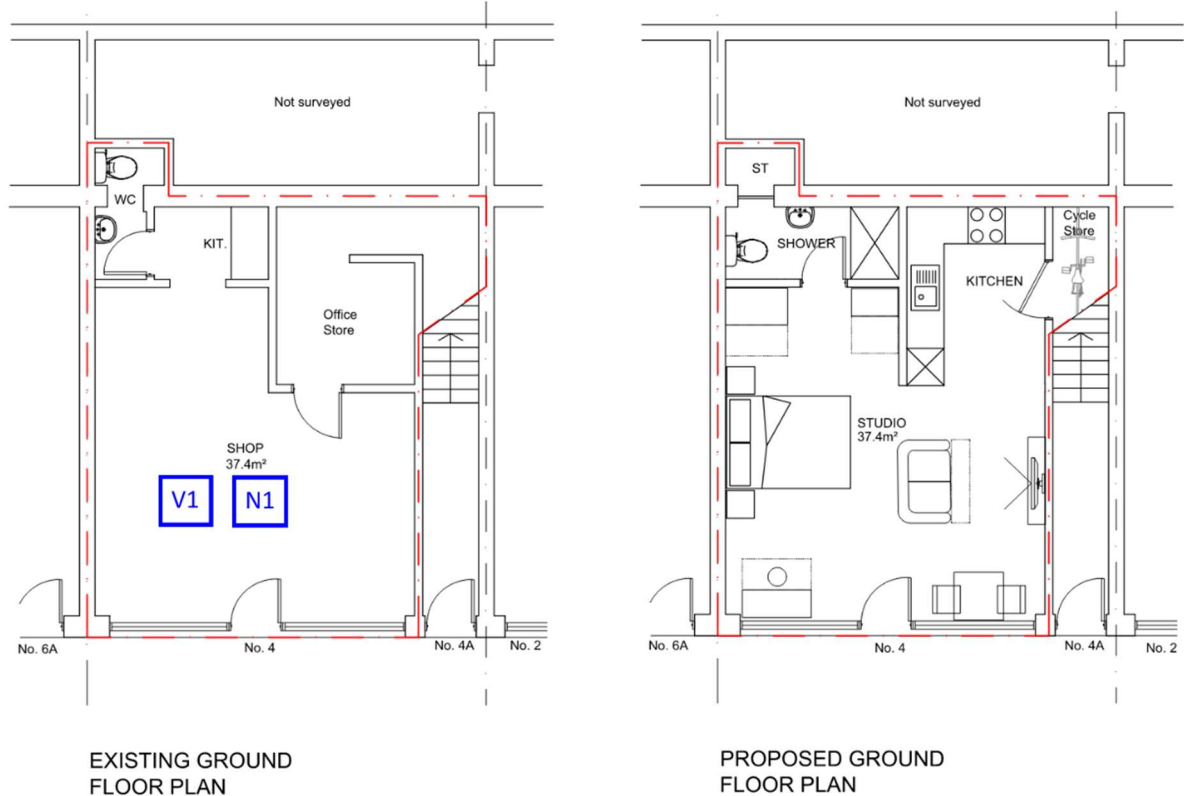
The site, shown in Figure 2.1, is a ground floor commercial unit to be converted to a single residential dwelling. The building sits on the boundary of the tunnel zone section belonging to London Underground Limited (LUL) Piccadilly Line.

Figure 2.1: Site location



The existing and proposed site layouts are shown in Figure 2.2.

Figure 2.2: Existing and proposed site plans showing noise (N1) and vibration monitoring (V1) positions



3 RELEVANT GUIDANCE AND CRITERIA

3.1 Planning Conditions

Planning condition 8 of application reference HGY/2026/0163 states:

“The development hereby permitted shall not be commenced until the following documents, in consultation with London Underground have been submitted to and approved in writing by the local planning authority which:

a) An assessment of railway noise and vibration shall be carried out and appropriate protective measures shall be taken to protect the users of the property and of other properties potentially affected as a result of the current development against noise and vibration.

Reason: To ensure that the development does not impact on existing London Underground/DLR transport infrastructure, in accordance with the London Plan 2021 Policy T3 and Sustainable Transport Walking and Cycling London Plan Guidance 2022.”

3.2 British Standard BS 6472:2008 (Vibration Criteria)

BS 6472:2008 describes an approach for assessing vibration within a building against criteria for human response and is commonly applied to residential developments for planning purposes. The assessment is based on the Vibration Dose Value (VDV), which accounts for both the magnitude and frequency of vibration events over a defined period, with separate criteria for daytime and night-time exposure.

The BS 6472 guidance classifies VDV's according to the likelihood of adverse comment from occupants. These response categories and their corresponding VDV ranges are summarised in Table 3.1 below.

Table 3.1: Vibration Dose Value assessment

Location	Time	Low probability of adverse comment ($\text{m/s}^{1.75}$)	Adverse comment possible ($\text{m/s}^{1.75}$)	Adverse comment probable ($\text{m/s}^{1.75}$)
Residential	Day (07:00 to 23:00)	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
	Night-time (23:00 to 07:00)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

In order to align the BS 6472 response categories with the Planning Practice Guidance (PPG) for Noise, the response bands have been mapped against the concepts of the *Lowest Observed Adverse Effect Level* (LOAEL) and *Significant Observed Adverse Effect Level* (SOAEL). This interpretation is presented in Table 3.2.

Table 3.2: BS 6472:2008 assessment in relation to PPG-N

Location	Time	Day (07:00 to 23:00)	Night-time (23:00 to 07:00)	PPG – Noise
Residential	Adverse comment probable ($\text{m/s}^{1.75}$)	0.8 to 1.6	0.4 to 0.8	SOAEL
	Adverse comment possible ($\text{m/s}^{1.75}$)	0.4 to 0.8	0.2 to 0.4	LOAEL
	Low probability of adverse comment ($\text{m/s}^{1.75}$)	0.2 to 0.4	0.1 to 0.2	

3.3 Re-radiated Noise Criteria

There are currently no UK legislative standards or formalised assessment criteria that define the threshold at which groundborne re-radiated noise from subterranean railway operations becomes significant within residential properties. In order to support a robust planning assessment, relevant guidance documents associated with operational underground railway infrastructure have therefore been reviewed to establish appropriate reference criteria.

The London Underground Limited (LUL) Noise and Vibration Asset Design Guidance sets out assessment methodologies and design criteria for new operational railway assets. While these criteria are recognised as being relatively stringent and primarily intended for asset design rather than residential amenity, they provide a useful benchmark value of 40 dB L_{AFmax} for residential groundborne noise.

Table 1 of the *Crossrail 1: Information for Developers* guidance (2019) presents an operational groundborne noise criterion for residential buildings of 40 dB L_{ASmax} . This is broadly equivalent to an L_{AFmax} level in the range of approximately 43–45 dB.

Similarly, Table 1 of the *Crossrail 2: Information for Developers* guidance (2021) specifies a more stringent operational groundborne noise criterion for residential receptors of 35 dB L_{AFmax} .

The referenced guidance values have been compared and interpreted alongside the impact descriptors set out in the Planning Practice Guidance (PPG) – Noise to provide a planning-based interpretation of potential significance. On this basis, the re-radiated noise levels shown in Table 3.3 are considered appropriate for defining the *Lowest Observed Adverse Effect Level* (LOAEL) and *Significant Observed Adverse Effect Level* (SOAEL) for the purposes of this assessment.

Table 3.3: Re-radiated noise level in habitable rooms in relation to PPG-N

Re-radiated Noise Level in Habitable Rooms	Indication of Impact	PPG – Noise
> 50 dB L_{AFMax}	More likely to be an indication of significant adverse impact	SOAEL
40 dB L_{AFMax}	Unlikely to be an indication of adverse impact	LOAEL
< 35 dB L_{AFMax}		

4 VIBRATION SURVEY AND ASSESSMENT

4.1 General

The prevailing vibration conditions in the unit were determined by a short-term attended survey undertaken at the site. This section details the methodology and results of the survey, undertaken on Wednesday 23rd March 2026.

4.2 Vibration Survey Methodology

An attended vibration survey was undertaken within the ground floor commercial unit to assess the vibration levels derived from subterranean train movements. During the survey, multiple instances of train passes were recorded over a clean ~17-minute period which are considered representative of typical rail movements throughout the daytime and night-time periods, when extrapolated.

The measurements were obtained using an accelerometer connected to a SV106D 3-channel vibration analyser mounted on a levelling plate and were undertaken at ground floor on the existing hard floor finish. Equipment details are fully summarised in Table 4.1. The vibration measurement location is shown in Figure 2.2.

4.3 Equipment Details

Table 4.1: Inventory of vibration measurement equipment

Equipment	Make & Model	Serial No	Calibration Due	Calibration Certification Number
Vibration Monitor	SV 106D	99843	03/03/2026	N/A ¹
Accelerometer	SV 84	T2728	30/09/2026	N/A ¹
Vibration Calibrator	SV 110	141960	10/11/2026	N/A ¹

¹Equipment under 2-years old and was subject to factory calibration prior to purchase

4.4 Vibration Survey Results

The results from the attended vibration measurements are summarised in Table 4.2 below. It was noted that there were approximately 11 No. train passbys which occurred during the measurement period. Figure 4.1 shows a time history graph of vibration measurement sample used.

Figure 4.1: Time history graph of vibration measurement sample used

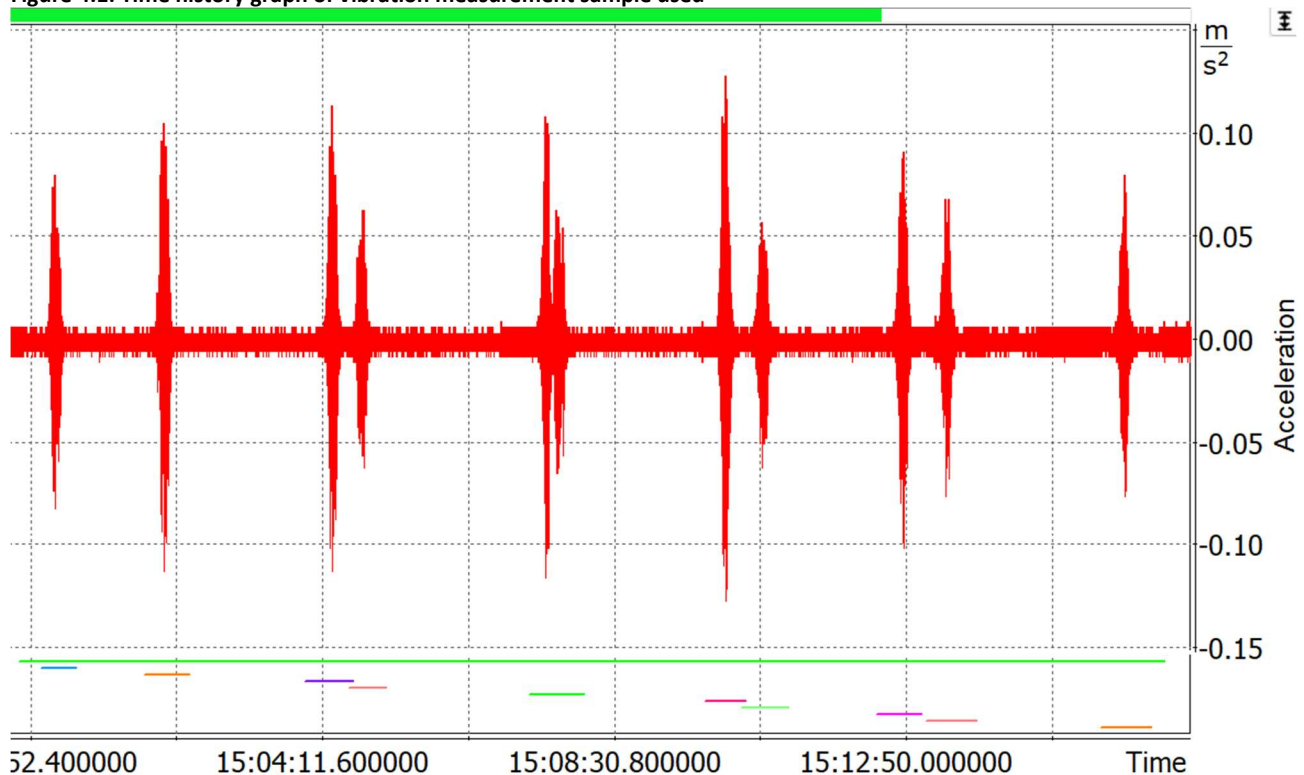


Table 4.2: Attended vibration survey results

Time (hh:mm:ss)	Duration (hh:mm:ss)	Measurement Axis (Weighting Applied to Measurement)	Measured VDV ($\text{m/s}^{1.75}$)
14:59:42	00:16:57	X (Wd)	0.028
		Y (Wd)	0.021
		Z (Wk)	0.204

Vibration Dose Values (VDV) have been determined over the full 16-hour day and 8-hour night-time periods which have been extrapolated from the measurement position, in accordance with BS 6472. Following a review of the timetables, it is understood that typically 350-360 No. train passbys occur during the daytime period on typical weekday operation, where a significantly lower 30-35 No. occur during the night on Fridays and Saturdays. The estimated VDV results for these number of passbys over each period are summarised in Table 4.3 below.

Table 4.3: Vibration dose value (VDV) results

Description	Weekday Daytime (07:00 – 23:00)			Thursday and Friday Night-time (23:00 – 07:00)		
	X-axis	Y-axis	Z-axis	X-axis	Y-axis	Z-axis
Resultant VDV, T ($\text{m/s}^{1.75}$)	0.07	0.05	0.49	0.07	0.05	0.27

The results presented in Table 4.3 show that vibration levels arising from train movements are predicted to remain well below the lowest threshold associated with a 'low probability of adverse comment' for the horizontal X and Y axes, therefore below the PPG-N 'LOAEL' impact category. This indicates that railway-induced horizontal vibration is unlikely to be perceptible within the proposed dwellings during both daytime and night-time periods.

Predicted vibration levels on the vertical Z axis fall within the onset of the ‘*adverse comment possible*’ category during the daytime period. This is also anticipated during the night-time period on Fridays and Saturdays, when a reduced overnight service operates. This falls within the centre of the PPG-N ‘LOAEL’ category. However, during the night-time period from Sunday to Thursday, when significantly fewer train movements occur, predicted vertical vibration levels are expected to reduce to within the ‘*low probability of adverse comment*’ category, therefore falling below within the onset or below the ‘LOAEL’ category.

5 NOISE SURVEY AND ASSESSMENT

5.1 General

The prevailing noise conditions in the unit due to groundbourne vibration, was determined by a short-term attended noise survey undertaken at the site. This section details the methodology and results of the survey, undertaken on Wednesday 23rd March 2026.

5.2 Noise Survey Methodology

An attended noise survey was undertaken within the ground floor commercial unit to assess the re-radiated noise levels derived from subterranean train movements. During the survey, multiple instances of train passes were recorded over a 30-minute period using a logging sound level meter capturing 100ms samples of 1/3 octave band data and audio. The data was then post-processed so that the data for individual train passby events was extracted to obtain the spectral 1/3 octave band L_{Fmax} data.

The measurements were obtained using a microphone mounted on a tripod near to but not in the centre of the room, at a height of about 1.2 m. Equipment details are fully summarised in Table 5.1. The noise measurement location is shown in Figure 2.2.

5.3 Equipment Details

Table 5.1: Inventory of noise measurement equipment

Equipment	Make & Model	Serial No	Calibration Due	Calibration Certification Number
Sound Level Meter	Svantek SV971A	151394	26/08/2027	00006364-2
Calibrator	Svantek SV36	162775	16/10/2026	1513623-1

5.4 Noise Survey Results

The results from the attended noise measurements are summarised in Table 5.2 below. Two separate attended measurements were carried out. It was noted that there was an overall of 13 No. audible train passbys captured during the measurement periods.

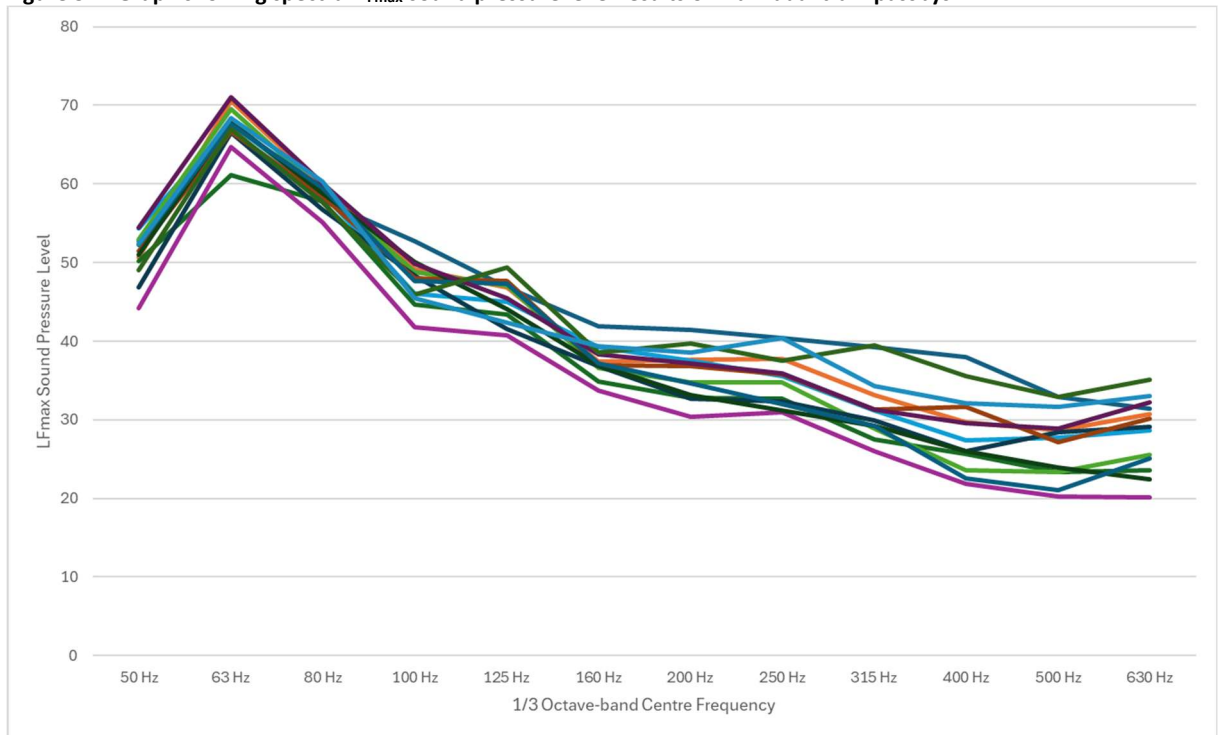
In order to minimise the effects of background noise on the measurement results due to road traffic noise break-in via the facade, the spectral 1/3 octave-band L_{Fmax} between the frequency range of 50Hz and 630Hz was recomposed to derive the overall L_{AFmax} level for each passby.

Table 5.2: Attended vibration survey results

Time (hh:mm:ss)	Duration (hh:mm:ss)	Range of Measured L_{AFmax}	Typical L_{AFmax} Level (Arithmetic Mean Average)
14:56:20	00:25:09	39-46 dB	43 dB
15:53:17	00:16:00		

The spectral results of each train passby are shown on a graph in Figure 5.1.

Figure 5.1: Graph showing spectral L_{Fmax} sound pressure level results of individual train passbys



The results of the re-radiated noise measurements indicate that noise levels associated with a typical train pass-by fall within the upper range of the *Lowest Observed Adverse Effect Level* (LOAEL). As such, while the noise may be perceptible to occupants, it is not expected to give rise to a significant adverse effect on residential amenity.

6 CONCLUSIONS

Anderson Acoustics Ltd was commissioned by KIKS Group Ltd in March 2025 to provide a noise and vibration impact assessment to discharge a planning condition relating to a residential development at 4 Whittington Road, London N22.

The outcome of which is summarised below.

- On-site noise and vibration surveys have been undertaken to inform the assessment of potential impacts arising from the proximity of the London Underground Piccadilly Line tunnels.
- The assessment demonstrates that, under worst-case conditions, predicted vibration dose values (VDV) within the proposed dwelling fall within the PPG-N *Lowest Observed Adverse Effect Level* (LOAEL) during weekday daytime periods and during night-time periods on Fridays and Saturdays.
- During night-time periods for the remainder of the week, predicted vertical vibration levels are anticipated to be at, or below, the threshold of the LOAEL category.
- Predicted levels of re-radiated noise associated with groundborne vibration are expected to remain within the upper range of the LOAEL impact classification during operation.
- Overall, the findings indicate that noise and vibration effects associated with the operation of the Piccadilly Line are considered manageable in planning terms and do not represent a significant constraint to the proposed residential use.

With the above in mind, the outcome of the assessment demonstrates that Planning Condition 8 should be discharged.