

Acoustic South East



Noise Management Plan / Delivery and Servicing Plan

Client:	Telereal Trading Property Ltd
Site Address:	Aspect House, Spencer Road, Lancing
Reported By:	Simon Barrett BSc(Hons) MSc MIOA MInstSCVE
Date Written:	09/03/2026
	Issue 5
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Report by: Simon Barrett BSc(Hons) MSc MIOA MInstSCVE

Checked by: Scott Castle BSc(Hons) CEnvH MCIEH MIOA

Issue No.	Date	Comments
1	23/02/2026	DRAFT Issue – Daytime Assessment Only.
2	24/02/2026	Some additional wording to the context to clear up the understanding around the historical / current usage of the site. Additionally, assessment for night-time has been added along with a section discussing mitigation measures.
3	05/03/2026	Unnecessary paragraphs removed from page 25.
4	05/03/2026	Client Name changed from TTG to Telereal Trading Property Ltd
5	09/03/2026	Wording change in Section 2.1

1 Introduction and Executive Summary

Acoustic South East have been appointed to undertake a noise impact assessment relating to the proposed change of use of Aspect House, Spencer Road, Lancing. This noise assessment will be submitted to support the planning application to the Local Planning Authority, which includes the proposed removal of the “Personalised Permission” under Adur and Worthing DC’s reference of ADC/0439/07 and to grant a new more flexible arrangement within use classes E(g), B2 and B8.

Standards and guidance referenced for this assessment include:

- BS4142:2014-A1:2019 - Methods for rating and assessing industrial and commercial sound
- Planning Noise Advice Document Sussex dated November 2023

The purpose of this assessment is to predict any adverse impact a potential change of use may have on the existing residential noise sensitive receptors (NSRs) that are nearby.

The results of the survey and assessment show that the outcomes of the computer model variants, at the nearest NSRs are below the relevant representative A-Weighted L90 Background Sound Level. Applying penalties and on-time corrections would see that the resultant Rating Levels remain below the measured background sound pressure levels. This would also be the case with all sound sources combined.

BS4142:2014-A1:2019 states that if the Rating Level is at Parity with the L90 Background Sound Level, then Adverse Impact is unlikely. It also states that the lower the Rating Level is in comparison to the Background Sound Level, the likelihood of impact decreases further.

For Daytime hours (ie 07:00 to 23:00hrs), given that the Rating Level is below the Background Sound Level in all cases, even with all sound sources combined, then adverse impact is unlikely.

For night-time hours (i.e. 23:00 – 07:00hrs), however, adverse impact would be likely if (diesel) forklifts were to operate externally along the northern portion of the site (as modelled). The indoor industrial operation so long as the internal SPL remains below 95dBA and doors and windows remain closed) would not give rise to adverse impact, nor would the arrival and departure of a large articulated lorry (or loading/unloading of it).

Mitigation Measures relating to night-time operations have been discussed in Section 6 of this report.

Based on the outcome of the assessment, it is recommended that planning consent is not withheld on the basis of noise grounds for the proposed uses discussed in Section 2 of this report, so long as mitigation in Section 6 is also adopted.

2 Context and Noise Criteria

2.1 Site Description

The application site is Aspect House, Spencer Road, Lancing. Formerly home to “Equiniti”. The site currently operates under a “Personalised Permission” against planning reference number: ADC/0439/07 and has current permitted uses belonging to it and had time frames around when loading and unloading can occur being unrestricted unless the vehicle was larger than 3 tonnes (larger vehicle loading/unloading was limited to daytime hours only: 07:00 – 23:00hrs)

Whilst the current tenant is due to vacate in the first half of 2027, it is practically vacant at present except a few occasional staff members and building services engineer visits.

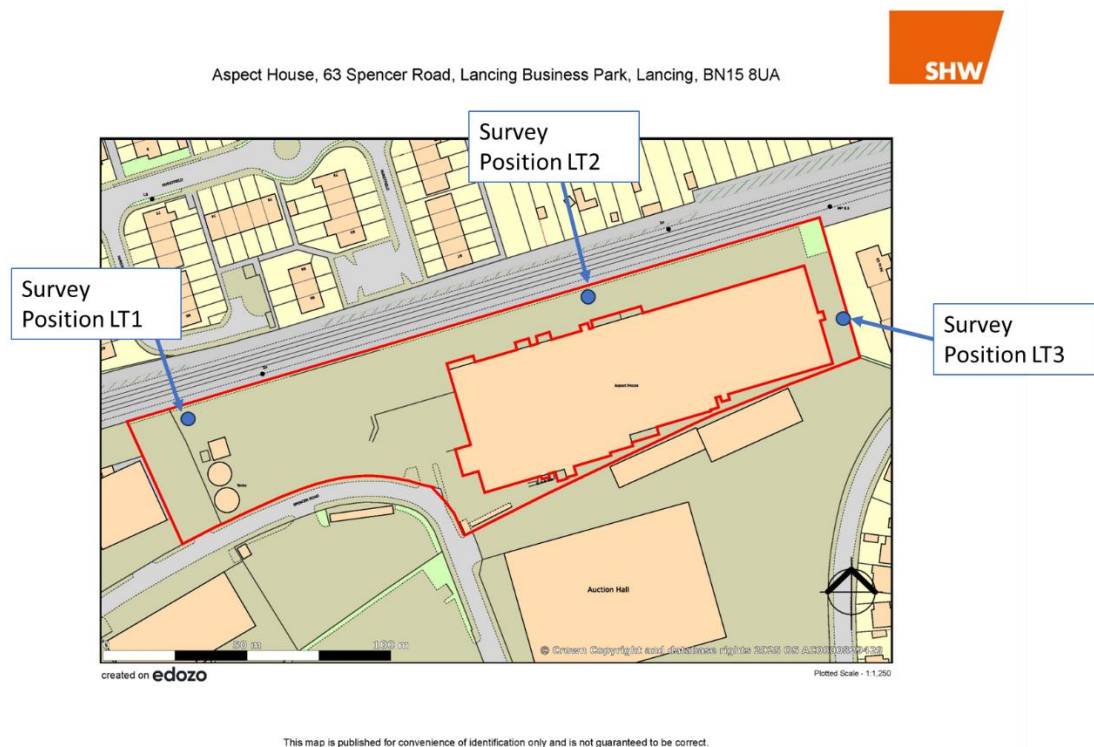


Figure 1. Site & Survey Location

The site is currently leased by a large company “Equiniti”, who are a secure data storage company with a large warehouse full of documents being stored securely both electronically and physically.

The site has internal office space on ground and first floors and temperature-controlled spaces.

The site has various roller-shutter doors, on the western flank - some of which have been blocked up. There are also roller-shutter doors on the northern flank of the building.

Collections and deliveries take place via the loading bay on the western flank of the building, close to the reception area (these are limited on size of vehicle during night-time hours).

There is a large carpark to the west of the building and to the west of the car park are two large water-storage tanks, used to supply the temperature control system.

Some photos of the site as it currently stands (taken during the noise-breakout measurement process) are below:

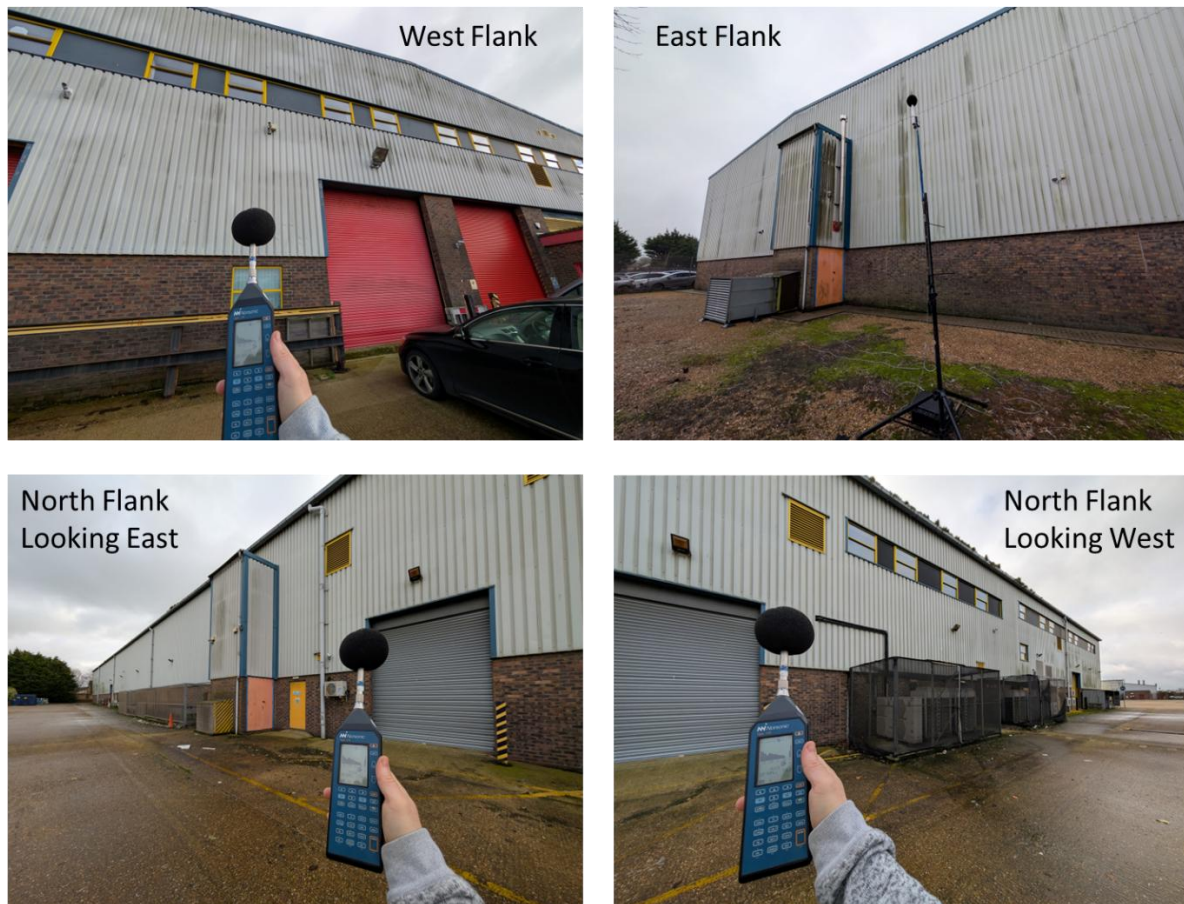


Figure 2: Photos of Outside of Existing Site

2.2 Proposal

The planning application relates the potential for a change of use of the building into any of the following:

- E(g) (offices for operation/admin purposes, R&D of products, industrial processes)
- B2 (General Industrial)
- B8 (Storage & Distribution)

It also seeks to remove the “personalised permission” to enable future tenants of the site to operate more flexibly and over the full 24-hour period.

These proposals have been discussed at length during the pre-application process between ECE Planning, Telereal Trading Property Ltd and the Local Planning Authority including Michael Lavender within the Environmental Protection Department and Peter Barnett – the

Planning Officer. This meeting took place on 26th November 2025. Minutes from this meeting are available upon request.

2.3 Nearest Residential Receptors (NSR's)

The nearest residential NSRs are to the east of the site along Elm Grove. The next-nearest NSRs are houses to the north of the railway track at Hurstfield and Tower Road.

2.4 Hours of Use

The operating hours of the current occupiers of Aspect House (Equiniti) are 08:30 – 17:30hrs Monday – Friday. Historically the building has had hours of use allowing 24-hour operation, with a limitation on vehicle size accessing the site during night-time hours.

The future use is yet to be applied for and this report is to assist with that – it is understood that the desire is for 24-hour use for future occupants to be possible.

2.5 Soundscape

The soundscape at the nearest NSR was dominated by rail traffic directly to the north of the site and mixed commercial sound from neighbouring units such as Shoreham Vehicle Auctions, Worthing Coaches, Lancing Commercial Ltd and Davis Metal Recycling.

The application site was vacant during the report's author's visits to site for the initial background and ambient surveys.

Various plant exists on site on the various flanks, but during site visits, none were audibly observed to be operating.

Approximately 12 trains pass-by the site during a 1-hour period on weekdays during peak time.

2.6 National Planning Policy

2.6.1 National Planning Policy Framework (Dec 2024)

The National Planning Policy Framework (Dec 2024) defines the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The following paragraphs are relevant within NPPF Section 15 (Conserving and enhancing the natural environment) states the following:

Paragraph 187(e) - Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability, and

Paragraph 198 - Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

Paragraph 200– Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.

2.7 Local Planning Guidance – Planning Noise Advice Document Sussex, Nov 2023

Several Local Planning Authority (‘LPA’) departments have collaborated to create the Planning Noise Advice Document Sussex which Wealden District Council is signatory to. The document details relevant standards that should be referred to when completing a noise impact assessment.

Based upon the local guidance noise levels for the day and the night time period have been assessed in terms of and following the guidelines of the documents listed below:

- BS4142 (2014) Method for rating industrial noise affecting mixed residential and industrial areas

2.8 BS4142(2014+A1:2019): Method for rating and assessing industrial and commercial sound

This document provides a means of assessing the impact of industrial or commercial sound upon nearby noise-sensitive receptors, including residential properties.

It does this by comparing the Rating Level of the noise from the industrial or commercial source with the pre-existent L_{90} background noise level affecting the same noise-sensitive premises. The Standard provides guidance that:

- a) Typically, the greater the difference, the greater the magnitude of the impact.
- b) A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.
- d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background noise level, this is an indication of the specific sound source having a low impact, depending on the context.

3 Sound Survey Baseline Conditions & Results

A survey of the site soundscape was carried out between Tuesday 3rd February 2026 to Tuesday 10th February 2026 to measure the existing background and ambient sound pressure levels affecting the nearby receptors to the site. Weather was also monitored to ascertain any weather periods which might impact the dataset (i.e. high wind speeds).

3.1 Unattended Sound Survey Details

The 3 figures below show the survey locations used for the long-term measurements.



Figure 3. Long Term Background Sound Survey – LT1



Figure 4: Long Term Background Sound Survey – LT2



Figure 5: Long Term Background Survey - LT3

Survey(s) carried out by	Simon Barrett BSc(Hons) MSc MIOA MInstSCVE
Equipment Used	Svantek 971a Class 1 Sound Level Meter, Serial: 133641 - LT1 Castle GA117 "Mirus" Class 1 Sound Level Meter, Serial: C111658 - LT2 Svantek 971a Class 1 Sound Level Meter, Serial: 159493 - LT3
Equipment Used	Norsonic Acoustic Calibrator – Serial No. 31083
Location LT1	LT1 – 4m from ground and sufficiently away from any direct wall thus considered freefield. W3W: ///vibrates.frosted.puppy
Location LT2	LT2 – 2m from ground, mounted above a staff smoking shelter and sufficiently away from any direct wall thus considered freefield. W3W: ///hears.about.blame
Location LT3	LT1 – 4m from ground and sufficiently away from any direct wall thus considered freefield. W3W: ///most.steep.quiet
Duration	3 February 2026 – 10 February 2026
Weather	Variable temperatures, mix of dry and rain. Windspeeds generally less than 5m/s

All noise levels in this report hereafter are free-field, fast time weighted and A-weighted levels, unless stated otherwise.

3.2 Unattended Sound Survey Results Summary

3.2.1 L90 Background Sound Levels

The survey data has been used to calculate the most commonly occurring (modal) background sound pressure levels ($L_{A90,15min}$) for the Daytime period (07:00hrs – 23:00hrs) and the night-time period (23:00hrs – 07:00hrs).

The table below shows the representative A-Weighted L90 Background Sound Levels (as calculated using the modal average discussed above).

Survey Location	Daytime L90 (dBA)	Night-time L90 (dBA)
LT1	46	43
LT2	43	40
LT3	44	39

Table 1: Representative L90 Background Sound Levels

3.2.2 Leq Ambient Sound Levels

Logarithmically Averaged Day and Night time Periods (External - Freefield)-dB(A)			
Survey Position LT1			
L _{Aeq} , 16 hour- 07:00-23:00		L _{Aeq} , 8 hour 23:00-07:00	
Day 1	61.1	Night 1	58.4
Day 2	61.4	Night 2	57.6
Day 3	62.3	Night 3	57.6
Day 4	61.0	Night 4	56.9
Day 5	58.1	Night 5	54.3
Day 6	63.8	Night 6	56.3
Arithmetic Average	61.3	Night 7	57.0
		Arithmetic Average	56.9
Survey Position LT2			
L _{Aeq} , 16 hour- 07:00-23:00		L _{Aeq} , 8 hour 23:00-07:00	
Day 1	62.0	Night 1	59.5
Day 2	61.7	Night 2	58.7
Day 3	62.4	Night 3	58.1
Day 4	62.1	Night 4	57.6
Day 5	59.7	Night 5	55.6
Day 6	62.2	Night 6	58.0
Arithmetic Average	61.7	Night 7	58.4
		Arithmetic Average	58.0
Survey Position LT3			
L _{Aeq} , 16 hour- 07:00-23:00		L _{Aeq} , 8 hour 23:00-07:00	
Day 1	52.2	Night 1	49.0
Day 2	51.3	Night 2	49.4
Day 3	50.9	Night 3	48.4
Day 4	51.4	Night 4	47.4
Day 5	48.5	Night 5	45.1
Day 6	51.5	Night 6	46.9
Arithmetic Average	51.0	Night 7	47.1
		Arithmetic Average	47.6

Table 2: Survey Results

4 Possible Noise Sources

With this site being practically vacant of operations, it has not been possible to measure activities actually happening on site.

Additionally, as there are various possible future uses for this site different considerations have been made:

- Forklifts operating externally
- Articulated lorries arriving to site
- Forklift loading a lorry
- Internal industrial operations occurring at 85dBA Leq,T

4.1 External Forklift Operation

Clearly, forklifts move around frequently and as such are considered a moving point source.

Diesel fork lift trucks have previously been measured on B8 sites and they have been found to be 73dBA at a distance of 1.5m. It is possible to convert this to a sound power level using a directivity factor of 2. This gives a sound power level value of $L_w = 85\text{dBA}$. This included reversing alarms on the fork lift truck.

4.2 Articulated Lorry Arrival

Previous measurements have shown that a curtain-sided 44T articulated lorry drive-by (on a different B8 site) is 74.8dBA at a distance of 2m. In order to be able to place this as a sound source into a computer model, it is necessary to convert this into a sound power level, using a directivity factor of 2. This gives a sound power level value of $L_w = 88.8\text{dBA}$

4.3 Forklift Loading a Lorry

Previous measurements have shown that a forklift loading pallets on to a curtain-sided 44T articulated lorry and then fetching another and repeating this cycle (measured on a different B8 site) is 53.5dBA, measured at a distance of 15m. In order to be able to place this as a sound source into a computer model, it is necessary to convert this into a sound power level, using a directivity factor of 2. This gives a sound power level value of $L_w = 85\text{dBA}$

4.4 Internal Operations within Existing Building

In order to assess the potential noise breakout from industrial use within Aspect House, it was necessary to carry out some indoor-to-outdoor sound insulation tests of the building's façades on the sides which would affect the nearest NSRs.

Once these results were known, it was then possible to computer model the effect of the façade if the internal noise level was 85dBA (the upper exposure action value of the HSE's Noise at Work Regulations 2005 as amended 2021).

The façade's sound reduction varied depending upon the location as some areas were weaker with a Roller Shutter door being exposed to the sound source and other areas being

wall-only. Care was made to ensure no trains were passing the site during these measurements.

The figure below shows the relevant single-figure sound reduction values as measured on site (sound insulation graphs are available upon request):



Figure 6: Sound Insulation of Aspect House Façade

N.B. All the data used in this section will be used in the computer model variants of the next section of this report.

5 Computer Model

5.1 General

A computer model has been created to show how the sound from the proposed plant will propagate across the site based on different activities occurring. The computer noise model software “Immi” (Wölfel) has been used to create this.

A scaled drawing of the proposed site layout has been used as the underlying basis for the model and on it the existing commercial buildings, walls and residential dwellings have been inserted. Sound sources were then added relating to activities on site and these were applied to different variants allowing each to be modelled individually. This included the following variants:

- a forklift operating at two different external locations (separately modelled)
- a 44T articulated lorry arriving on site to the existing loading bay to the west of the building,
- a forklift loading the articulated lorry
- internal activities occurring at 85dBA (the upper exposure action value relating to the HSE noise at work regulations 2005 as amended 2021) (Doors Closed)

Reception points were then added to the site to represent the nearest residential noise sensitive receptors (NSRs).

The models were run for each variant and the results output to tabulated and graphical form.

The tabulated data shows values for specific reception points and the graphical contours – which are available in the appendices – show the sound pressure level across the whole of the relevant area along with a legend matching the colour contours to numerical values.

The basic computer model can be seen below with Reception Point annotation:

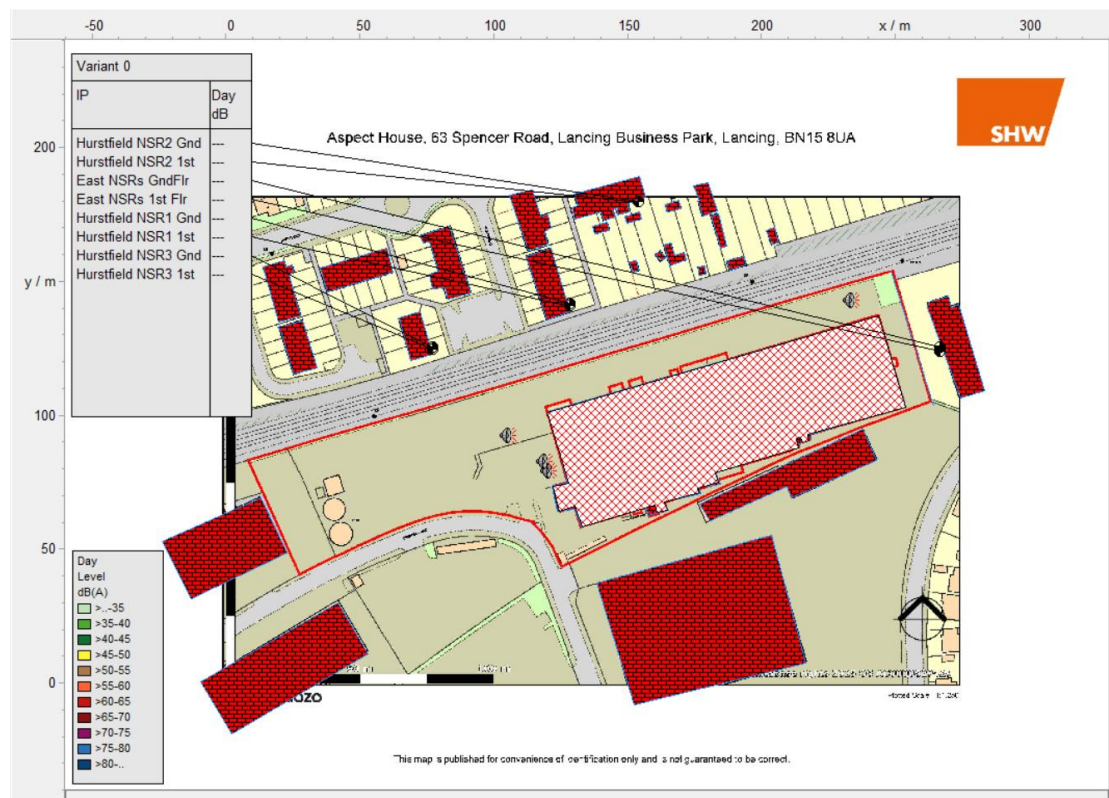


Figure 7: Basic Computer Model

5.2 Computer Model Output – Tabulated Data

5.2.1 Variant 1 – Forklift at North East of Site

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	37.4	44	-6.6
East NSRs 1st Flr	39.7	44	-4.3
Hurstfield NSR1 Gnd	32.2	43	-10.8
Hurstfield NSR1 1st	32.7	43	-10.3
Hurstfield NSR2 Gnd	32.5	43	-10.5
Hurstfield NSR2 1st	33.2	43	-9.8
Hurstfield NSR3 Gnd	28.4	46	-17.6
Hurstfield NSR3 1st	28.7	46	-17.3

Table 3: Immi Output – Tabulated Data – Variant 1 – Daytime

Reception Point	Leq,T (dBA)	Night time L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	37.4	39	-1.6
East NSRs 1st Flr	39.7	39	+0.7
Hurstfield NSR1 Gnd	32.2	40	-7.8
Hurstfield NSR1 1st	32.7	40	-7.3
Hurstfield NSR2 Gnd	32.5	40	-7.5
Hurstfield NSR2 1st	33.2	40	-6.8
Hurstfield NSR3 Gnd	28.4	43	-14.6
Hurstfield NSR3 1st	28.7	43	-14.3

Table 4: Immi Output – Tabulated Data – Variant 1 – Night-time

As can be seen from the tabulated data, the worst-case location is the 1st floor of the houses to the east of Aspect House. However, even in this case, the SPL resulting from the Forklift operation is 4dB below the existing L90 Background Sound at the window during daytime. At night-time this is 1dB above background. During the daytime, this allows for some character penalty to be applied from either clearly perceptible tonality (of a reversing alarm, for example) or from another type of attention drawing characteristic from heavy handling of pallets, such as a scrape along the ground or an accidental clatter of pallets. During night-time, however, there is no headroom for these inevitable penalties.

There would, of course, be an “on-time correction” which could be applied to the daytime 1-hour reference period as realistically, the above sounds would be momentary and not likely to occur for even close to a 1-hour period – even if the Forklift was operating in this area for a constant 15-minutes in a 1-hour period, there would be a 6dB reduction which could be applied. This would comfortably offset a character penalty as discussed above and thus during the

daytime, the “Rating Level” due to the Forklift would remain below background. During night-time, however, it would be above background in this single location.

5.2.2 Variant 2 – Forklift at North West of Site – Daytime

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	7.7	44	-36.3
East NSRs 1st Flr	8.2	44	-35.8
Hurstfield NSR1 Gnd	29.5	43	-13.5
Hurstfield NSR1 1st	34.9	43	-8.1
Hurstfield NSR2 Gnd	28.5	43	-14.5
Hurstfield NSR2 1st	33.3	43	-9.7
Hurstfield NSR3 Gnd	41.0	46	-5
Hurstfield NSR3 1st	42.7	46	-3.3

Table 5: Immi Output – Tabulated Data – Variant 2 – Daytime

Reception Point	Leq,T (dBA)	Night time L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	7.7	39	-31.3
East NSRs 1st Flr	8.2	39	-30.8
Hurstfield NSR1 Gnd	29.5	40	-10.5
Hurstfield NSR1 1st	34.9	40	-5.1
Hurstfield NSR2 Gnd	28.5	40	-11.5
Hurstfield NSR2 1st	33.3	40	-6.7
Hurstfield NSR3 Gnd	41.0	43	-2
Hurstfield NSR3 1st	42.7	43	-0.3

Table 6: Immi Output – Tabulated Data – Variant 2 – Night-time

As can be seen from the tabulated data, the worst-case location is the 1st floor of the nearest houses to the north-west of Aspect House. However, even in this case, the SPL resulting from the Forklift operation is 3dB below the existing L90 Background Sound at the window during daytime hours. During night-time, the SPL at the worst-case NSR would be parity with background. During the daytime, this allows for some character penalty to be applied from either slightly perceptible tonality (of a reversing alarm, for example) or from another type of attention drawing characteristic from heavy handling of pallets, such as a scrape along the ground or an accidental clatter of pallets. During the night-time, there would be no headroom for the inevitable character penalties.

There would, of course be an “on-time correction” which could be applied to the daytime 1-hour reference period as realistically, the above sounds would be momentary and not likely occur for even close to a 1-hour period – even if the Forklift was operating in this area for a constant 15-minutes in a 1-hour period, there would be a 6dB reduction which could be applied. This would comfortably offset a character penalty as discussed above and thus the SPL due to the Forklift would remain below background.

5.2.3 Variant 3 – Lorry Movement on Site

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	12.1	44	-31.9
East NSRs 1st Flr	12.3	44	-31.7
Hurstfield NSR1 Gnd	19.9	43	-23.1
Hurstfield NSR1 1st	30.5	43	-12.5
Hurstfield NSR2 Gnd	17.3	43	-25.7
Hurstfield NSR2 1st	20.7	43	-22.3
Hurstfield NSR3 Gnd	40.9	46	-5.1
Hurstfield NSR3 1st	41.9	46	-4.1

Table 7: Immi Output – Tabulated Data – Variant 3 – Daytime

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	12.1	39	-26.9
East NSRs 1st Flr	12.3	39	-26.7
Hurstfield NSR1 Gnd	19.9	40	-20.1
Hurstfield NSR1 1st	30.5	40	-9.5
Hurstfield NSR2 Gnd	17.3	40	-22.7
Hurstfield NSR2 1st	20.7	40	-19.3
Hurstfield NSR3 Gnd	40.9	43	-2.1
Hurstfield NSR3 1st	41.9	43	-1.1

Table 8: Immi Output – Tabulated Data – Variant 3 – Night time

As can be seen from the tabulated data, the worst-case location is the 1st floor of the nearest houses to the north-west of Aspect House. However, even in this case, the SPL resulting from the lorry movement is 4dB below the existing L90 Background Sound at the window. During Night-time, it is 1dB below background. This allows for some character penalty to be applied from either clearly perceptible tonality (of a reversing alarm, for example) or from other characteristics such as door-slams or tail-lift clatter.

There would, of course be an “on-time correction” which could be applied to the daytime 1-hour reference period as realistically, the it does not take a whole 1-hour period for a lorry to move on site – at most 5-minutes in a 1-hour period and this would allow a 10.8dB reduction to be applied. If two lorries arrived to and from site, thus entailing 10-minutes of activity, this would allow a 7.8dB reduction due to on-time. Likewise, with regard to night-time, the reference period is 15-minutes and applying an on-time correction of 5-minutes (1 arrival and departure) would provide a reduction of 4.8dB.

In either of these cases, this would offset a character penalty as discussed above and thus the SPL due to the lorry movements on site would remain below background at the nearest NSR's first floor window.

5.2.4 Variant 4 – Forklift Loading Lorry

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	8.3	44	-35.7
East NSRs 1st Flr	8.5	44	-35.5
Hurstfield NSR1 Gnd	16.5	43	-26.5
Hurstfield NSR1 1st	29.9	43	-13.1
Hurstfield NSR2 Gnd	14.5	43	-28.5
Hurstfield NSR2 1st	18.8	43	-24.2
Hurstfield NSR3 Gnd	37.7	46	-8.3
Hurstfield NSR3 1st	38.8	46	-7.2

Table 9: Immi Output – Tabulated Data – Variant 4 – Daytime

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	8.3	39	-30.7
East NSRs 1st Flr	8.5	39	-30.5
Hurstfield NSR1 Gnd	16.5	40	-23.5
Hurstfield NSR1 1st	29.9	40	-10.1
Hurstfield NSR2 Gnd	14.5	40	-25.5
Hurstfield NSR2 1st	18.8	40	-21.2
Hurstfield NSR3 Gnd	37.7	43	-5.3
Hurstfield NSR3 1st	38.8	43	-4.2

Table 10: Immi Output – Tabulated Data - Variant 4 – Night-time

As can be seen from the tabulated data, the worst-case location is the 1st floor of the nearest houses to the north-west of Aspect House. However, even in this case, the SPL resulting from the lorry movement is 7dB below the existing L90 Background Sound at the window during daytime. During night-time, this is 4dB below background.

In both cases, this allows for some character penalty to be applied from either clearly perceptible tonality (of a reversing alarm, for example) or from other characteristics such as pallet “clatter”. There would, of course be an “on-time correction” which could be applied to the daytime 1-hour reference period as realistically, it does not take a whole 1-hour period to load a lorry – at most 30-minutes in a 1-hour period and this would allow a 3dB reduction to be applied. During night-time, when the reference time is 15-minutes, applying an on-time of 10-minutes would invoke a 1.8dB reduction in SPL.

In both cases, it would still allow the SPL due to the lorry loading activity on site to remain below background at the nearest NSR’s first floor window even after character penalties are applied.

5.2.5 Variant 5 – 85dBA Internal SPL of Industrial Activity

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	29.0	44	-15
East NSRs 1st Flr	29.4	44	-14.6
Hurstfield NSR1 Gnd	28.9	43	-14.1
Hurstfield NSR1 1st	30.3	43	-12.7
Hurstfield NSR2 Gnd	24.2	43	-18.8
Hurstfield NSR2 1st	27.0	43	-16
Hurstfield NSR3 Gnd	29.9	46	-16.1
Hurstfield NSR3 1st	31.0	46	-15

Table 11: Immi Output – Tabulated Data – Variant 5 – Daytime

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	29.0	39	-10
East NSRs 1st Flr	29.4	39	-9.6
Hurstfield NSR1 Gnd	28.9	40	-11.1
Hurstfield NSR1 1st	30.3	40	-9.7
Hurstfield NSR2 Gnd	24.2	40	-15.8
Hurstfield NSR2 1st	27.0	40	-13
Hurstfield NSR3 Gnd	29.9	43	-13.1
Hurstfield NSR3 1st	31.0	43	-12

Table 12: Immi Output – Tabulated Data – Variant 5 – Night-time

As can be seen, if the internal SPL is 85dBA within the building, then by the time it escapes the building envelope and reaches the nearest NSRs, it would still remain 13dB below background in the worst-case during daytime hours. During night-time, it would be 10dB below background.

At these SPLs, noise character is unlikely to be obvious. It also shows that there is considerable headroom to allow for internal noise levels to be higher than 85dBA (even up to 95dBA – although not recommended from a noise at work regulations point of view) whilst still remaining 3dB below background at the nearest NSR during daytime, or parity with background during the night-time.

It is worth stating that at 85dB internally, all employees would likely be wearing hearing protection. Also, it is important to note that this is based on modelling with all doors and windows closed.

5.2.6 Variant 6 – All On

The tabulated outputs of the computer model have been provided below for both daytime and night-time – each reception point is labelled with appropriate ground and first floor heights identified.

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	37.8	44	-6.2
East NSRs 1st Flr	39.9	44	-4.1
Hurstfield NSR1 Gnd	36.6	43	-6.4
Hurstfield NSR1 1st	39.2	43	-3.8
Hurstfield NSR2 Gnd	35.7	43	-7.3
Hurstfield NSR2 1st	37.9	43	-5.1
Hurstfield NSR3 Gnd	43.8	46	-2.2
Hurstfield NSR3 1st	45.1	46	-0.9

Table 13: Immi Output – Tabulated Data – Variant 6 – Daytime

Reception Point	Leq,T (dBA)	Daytime L90 Background (dBA)	Difference (dB)
East NSRs GndFlr	37.8	39	-1.2
East NSRs 1st Flr	39.9	39	+0.9
Hurstfield NSR1 Gnd	36.6	40	-3.4
Hurstfield NSR1 1st	39.2	40	-0.8
Hurstfield NSR2 Gnd	35.7	40	-4.3
Hurstfield NSR2 1st	37.9	40	-2.1
Hurstfield NSR3 Gnd	43.8	43	+0.8
Hurstfield NSR3 1st	45.1	43	+2.1

Table 14: Immi Output – Tabulated Data – Variant 6 – Night-time

As can be seen, even with all items (except the lorry arriving, as the lorry would not be moving at the same time as it being loaded on to), the SPL at the nearest NSR is still 1dB below the L90 Background Sound Level during daytime hours. During Night-time, however, it would mean that two reception points exceed background.

This is before on-time correction is applied or any other character penalties. However, given that the on-time corrections were more influential over the overall SPL than a character penalty, it is likely that a Rating Level - with all items occurring combined – would still be below the background sound level during daytime.

During night-time, it is likely that there would be a small amount of adverse impact with background being exceeded to the nearest NSRs to the east and to the North due to the combined sound sources.

5.3 Context and Uncertainty

The data regarding the proposed variants in this assessment is based upon measured data from previous sites and is also based upon a potential internal noise level. As the site is currently not actively in use in terms of vehicles operating on site, or industrial operations occurring inside, the variants being explored are potential likelihoods to allow the Local Authority and the Client to see what noise could arise.

In terms of measurements, Class 1 sound level meters have been used for the Background Sound Survey and were calibrated before and after measurements without any drift observed. Additionally, all other measurements referred to, meet these criteria.

Where there were similar L90 Background Sound Levels noted during statistical analysis, the lower was applied to ensure a robust assessment. In particular, this was noted for LT3.

With calculations, rounding was not carried out until the end of the sum in order to prevent double-handling.

The computer model was run with each individual variant and also with all sound sources operating together to represent a complete worst-case, although in reality this last all-on variant is unlikely to occur.

It is also important to note that the site is part of an active industrial estate and there are uses adjacent which incur the use of air and power tools relating to vehicle workshops etc. The site is also adjacent to and separated from the majority of NSRs by a busy railway line, which clearly dominates the soundscape during train pass-by events.

In terms of Variant 3 – Lorry Movements on Site – this should be considered in line with a transport assessment for any future users.

In terms of Variant 5 – Internal Industrial Noise Breakout – The computer model assumes the 85dBA throughout the full internal space, but in reality, if there are office spaces, these areas would be significantly quieter and they could be located in areas by the facades as buffer zones to help reduce noise breakout further.

6 Mitigation Measures

As has been seen, the adjusted computer model outputs, which are effectively “Rating Levels” based on the methods of Section 9 of BS4142:2014+A1:2019, show that whilst during the daytime, the on-time corrections mitigate any character penalties which are inevitable, during the night time some scenarios modelled show that this would not be the case.

For this reason, it is recommended that forklift operations do not occur during night-time hours as either when operating, or operating combined with lorry loading, the rating level would be pushed over night-time background sound levels for the nearest NSRs. The resultant effect of this would likely be the receipt of complaints. This is based upon the forklift trucks being diesel powered. IF they can be electrical instead, they would be significantly quieter than this and could be used during the night-time.

Additionally, it is also wise that any fork-lifts that *are* used externally are fitted with smart-alarms and use white noise instead of tones. This also would remove tonal character penalty from being applied to the noise levels from fork-lift truck operation.

Lorry movements on site, however, are not considered to require mitigation even during night-time hours (assuming this occurs at the west of the building close to the reception area) and indoor industrial activity within Aspect House (below 95dBA) would not give rise to adverse impact either, provided doors and windows remain closed.

A plan showing the location where diesel forklifts and lorries would be limited to during the night time is included in the appendices.

7 Conclusion (see intro)

The results of the survey and assessment show that the outcomes of the computer model variants, at the nearest NSRs are below the relevant representative A-Weighted L90 Background Sound Level. Applying penalties and on-time corrections would see that the resultant Rating Levels remain below the measured background sound pressure levels. This would also be the case with all sound sources combined.

BS4142:2014-A1:2019 states that if the Rating Level is at Parity with the L90 Background Sound Level, then Adverse Impact is unlikely. It also states that the lower the Rating Level is in comparison to the Background Sound Level, the likelihood of impact decreases further.

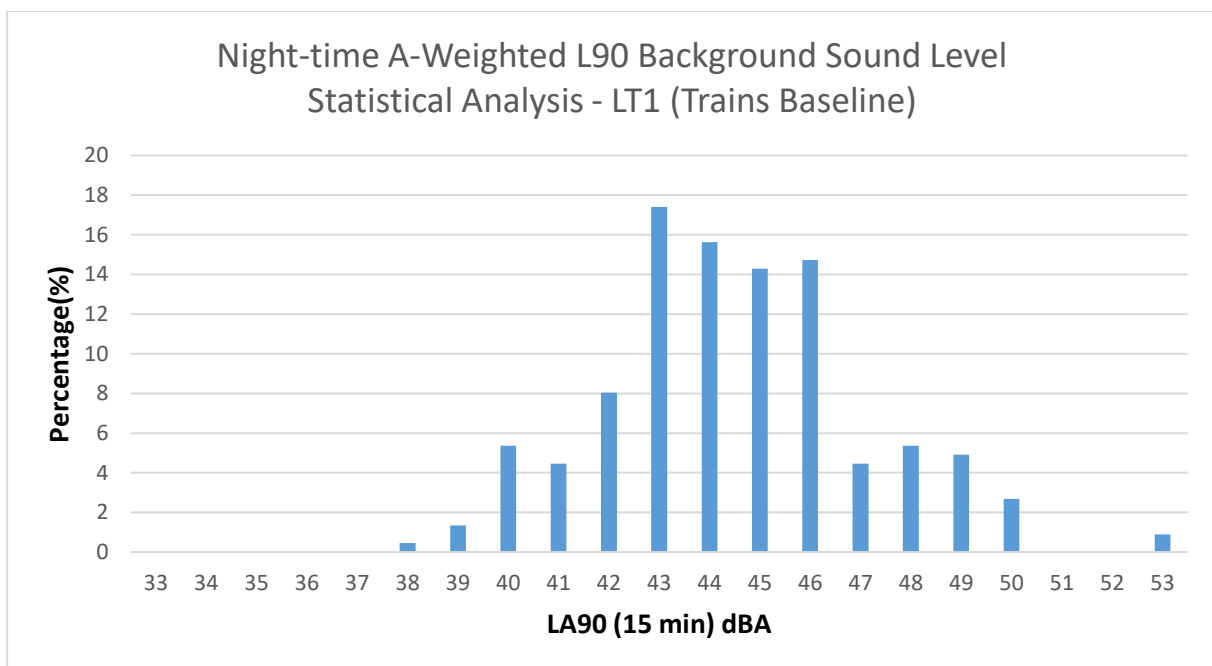
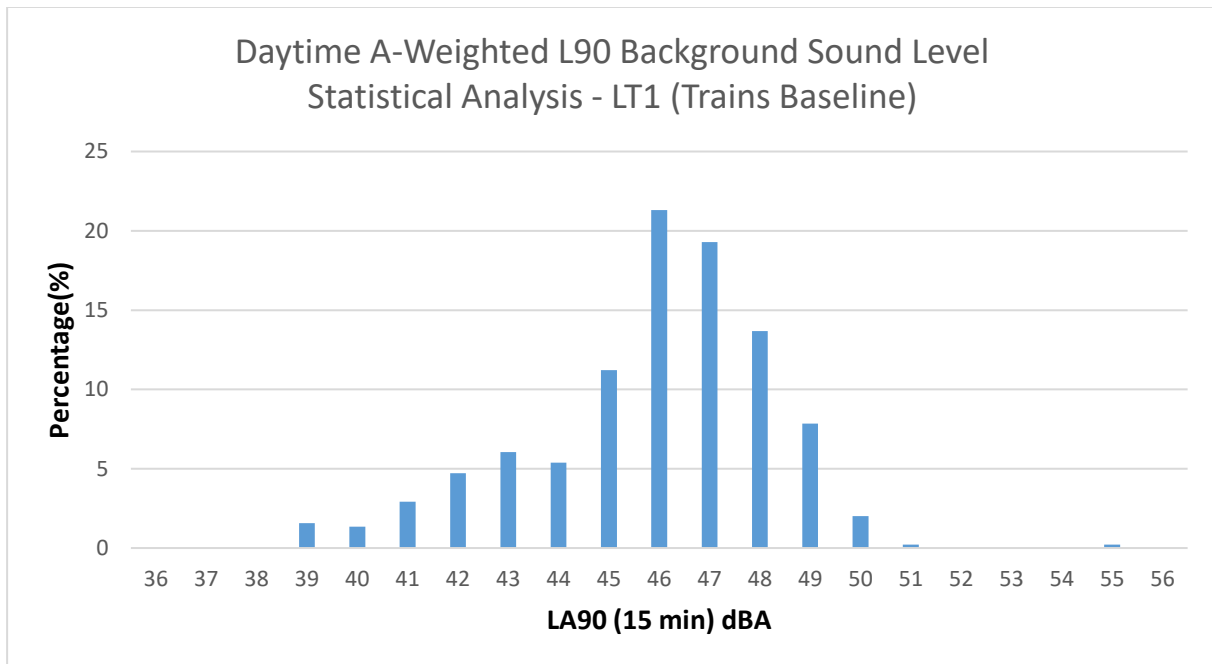
For Daytime hours (ie 07:00 to 23:00hrs), given that the Rating Level is below the Background Sound Level in all cases, even with all sound sources combined, then adverse impact is unlikely.

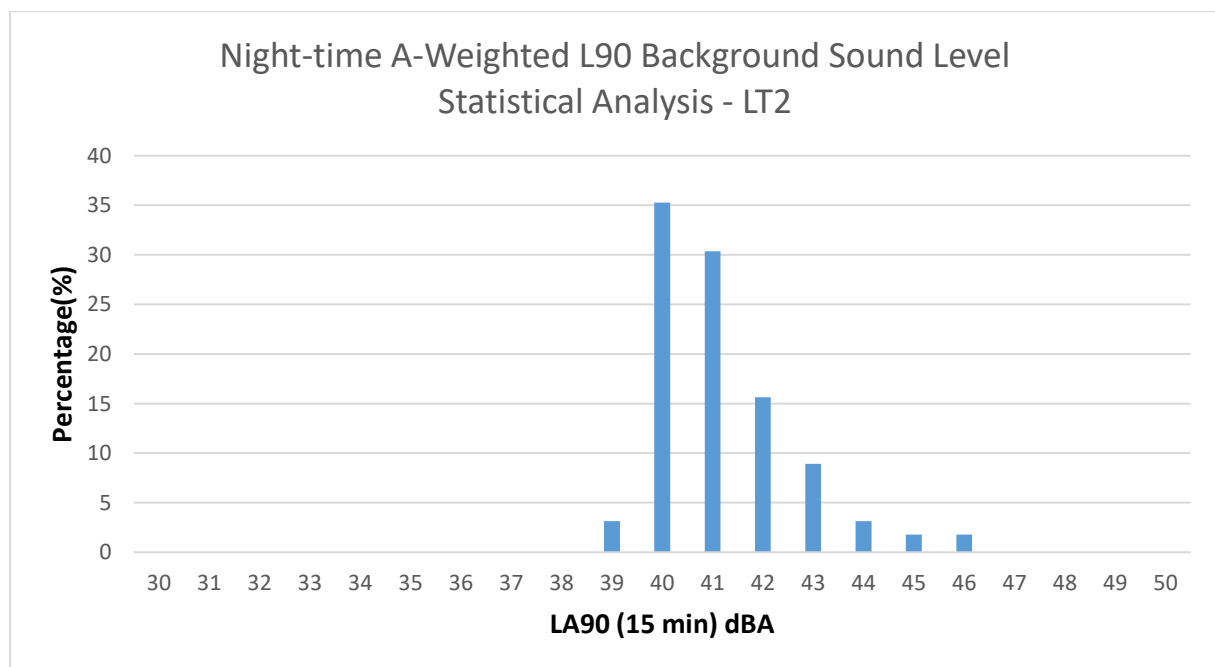
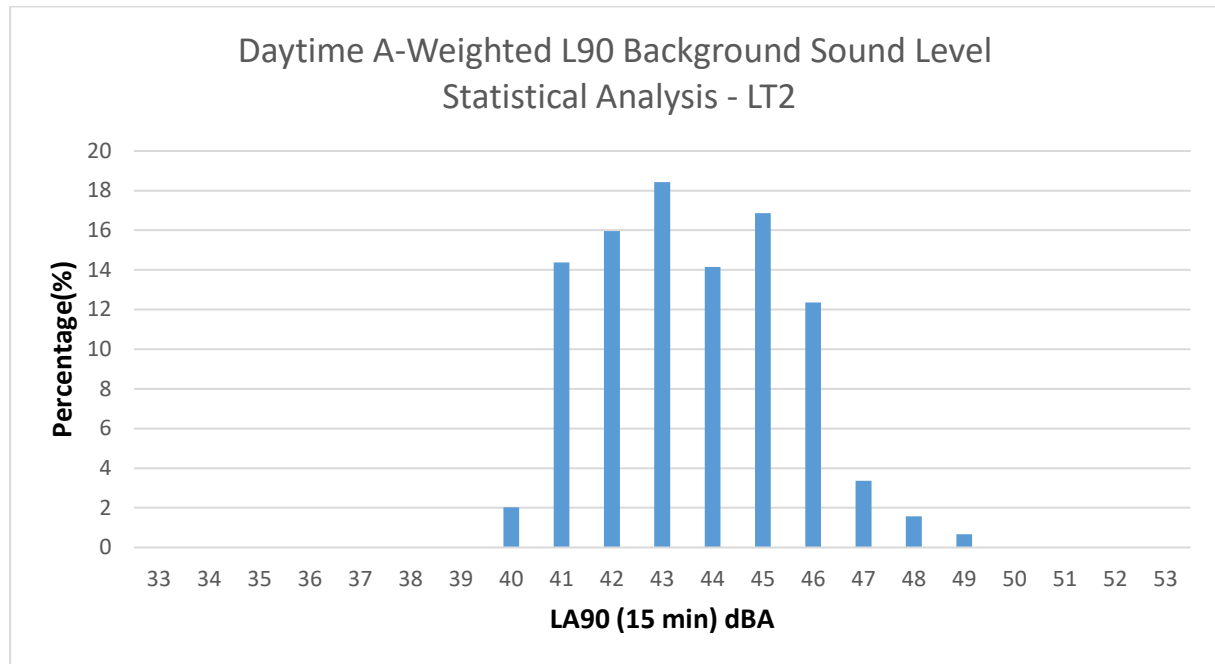
For night-time hours (i.e. 23:00 – 07:00hrs), however, adverse impact would be likely if (diesel) forklifts were to operate externally along the northern portion of the site (as modelled). The indoor industrial operation so long as the internal SPL remains below 95dBA and doors and windows remain closed) would not give rise to adverse impact, nor would the arrival and departure of a large articulated lorry (or loading/unloading of it).

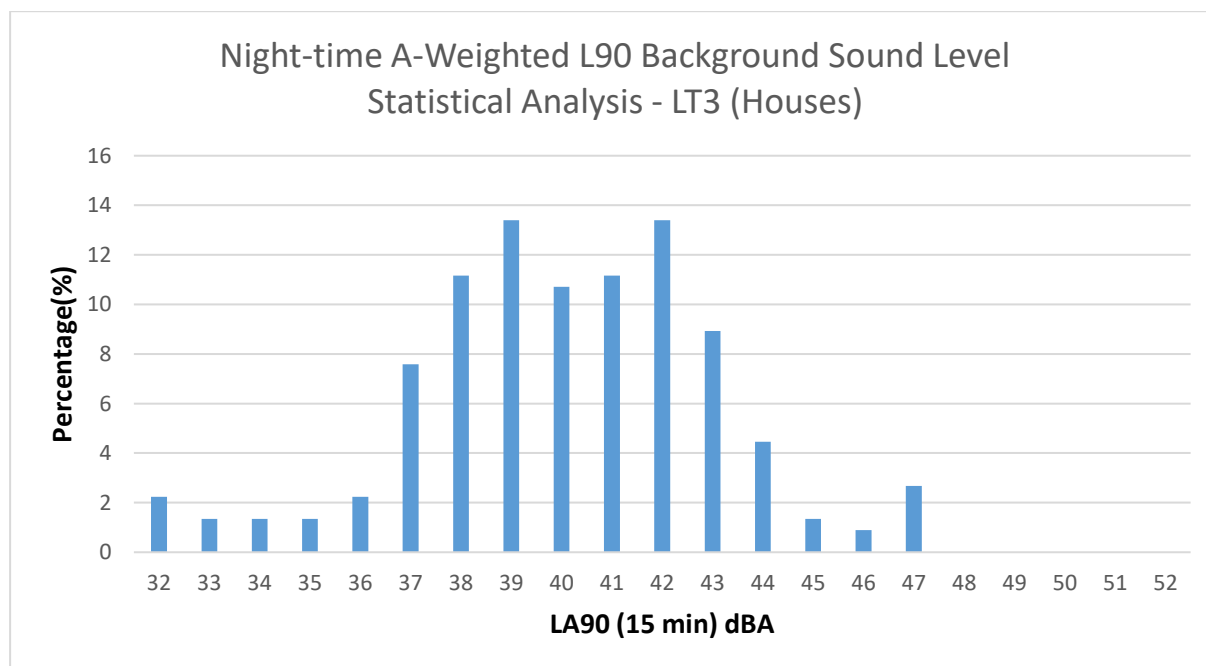
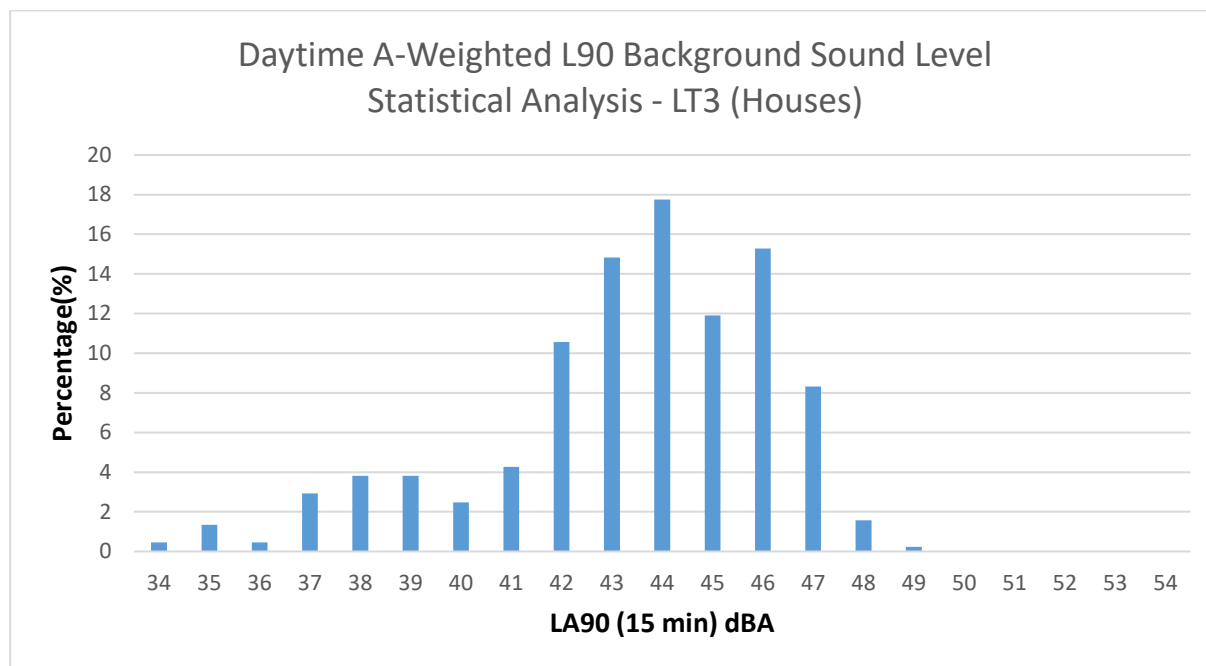
Mitigation Measures relating to night-time operations have been discussed in Section 6 of this report.

Based on the outcome of the assessment, it is recommended that planning consent is not withheld on the basis of noise grounds for the proposed uses discussed in Section 2 of this report, so long as mitigation in Section 6 is also adopted.

Appendix A – L90 Background Sound Level Statistical Analysis





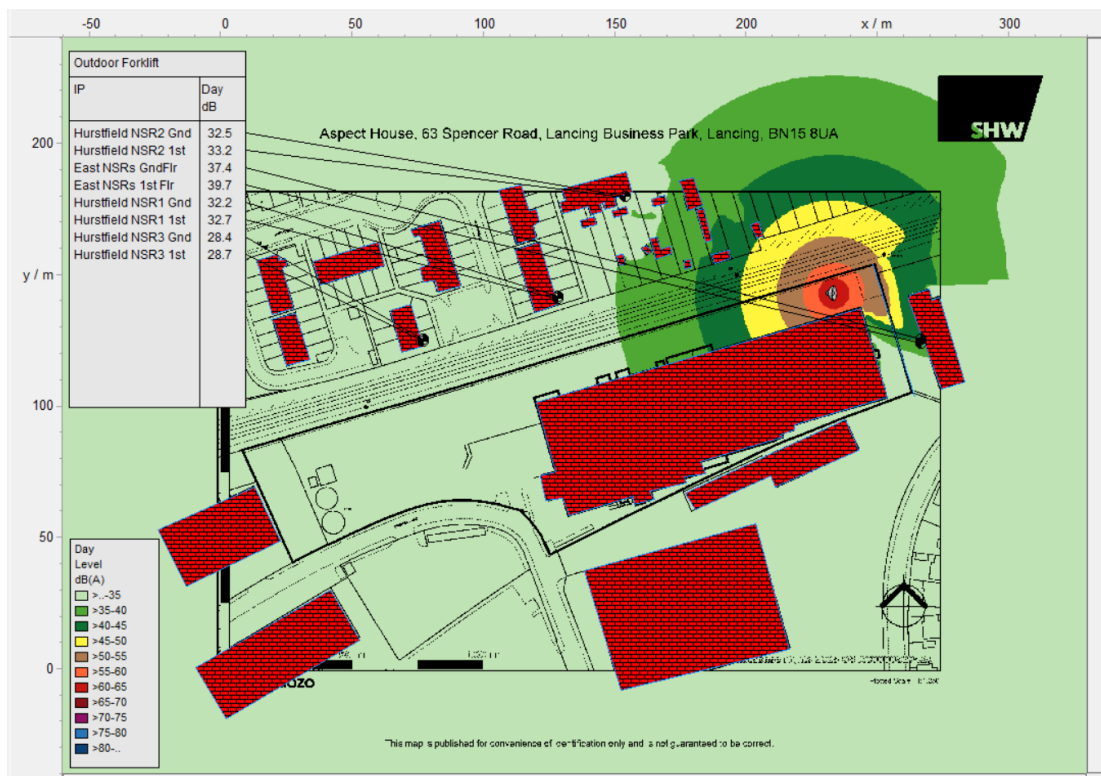


Appendix B – Computer Noise Model Contours

Variant 1 – Daytime



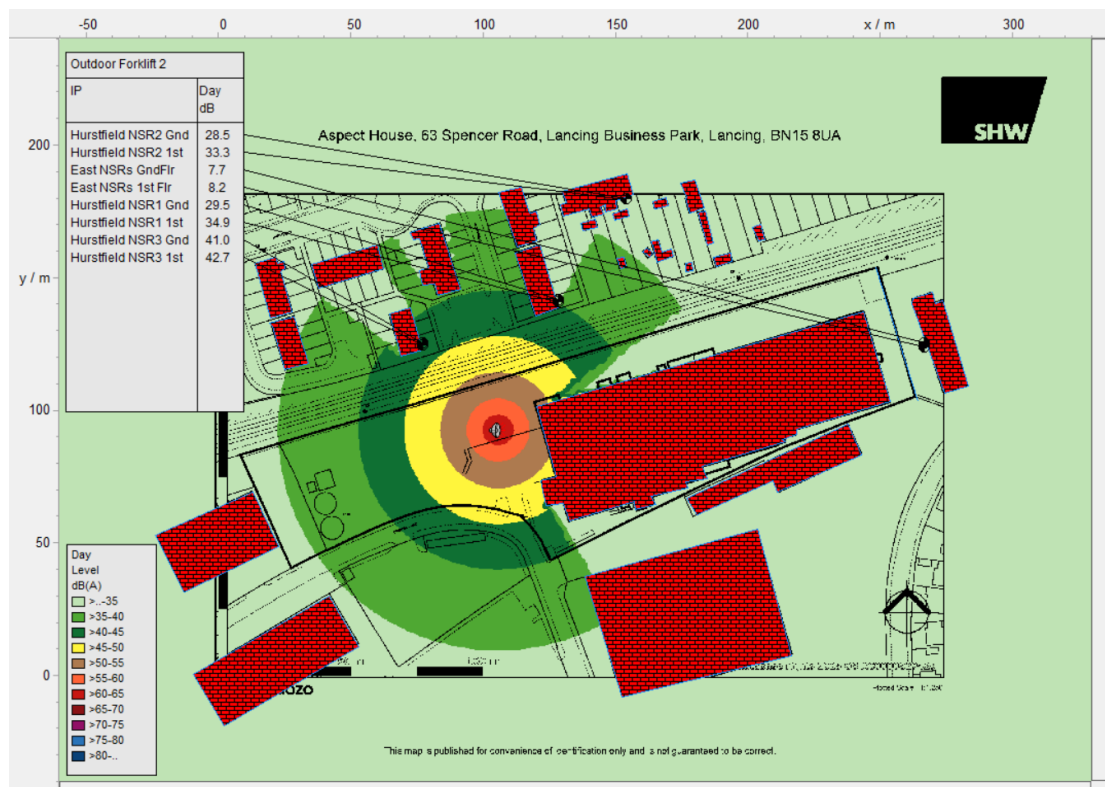
Variant 1 – Night-time



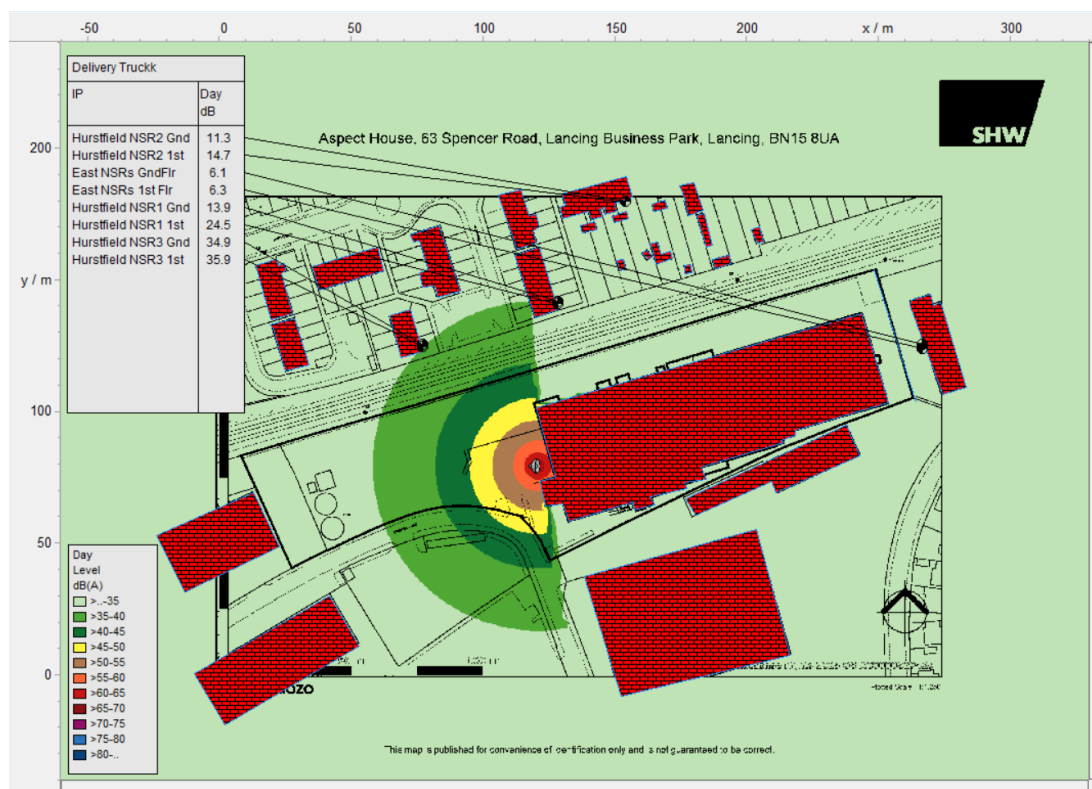
Variant 2 – Daytime



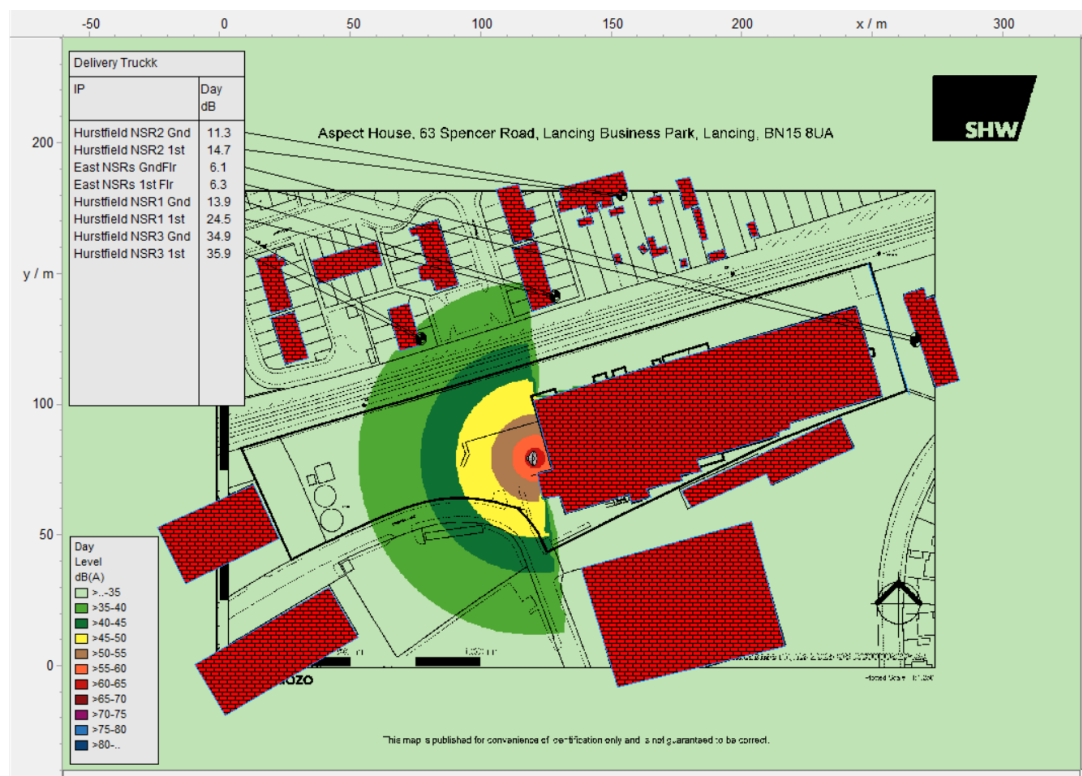
Variant 2 – Night-time



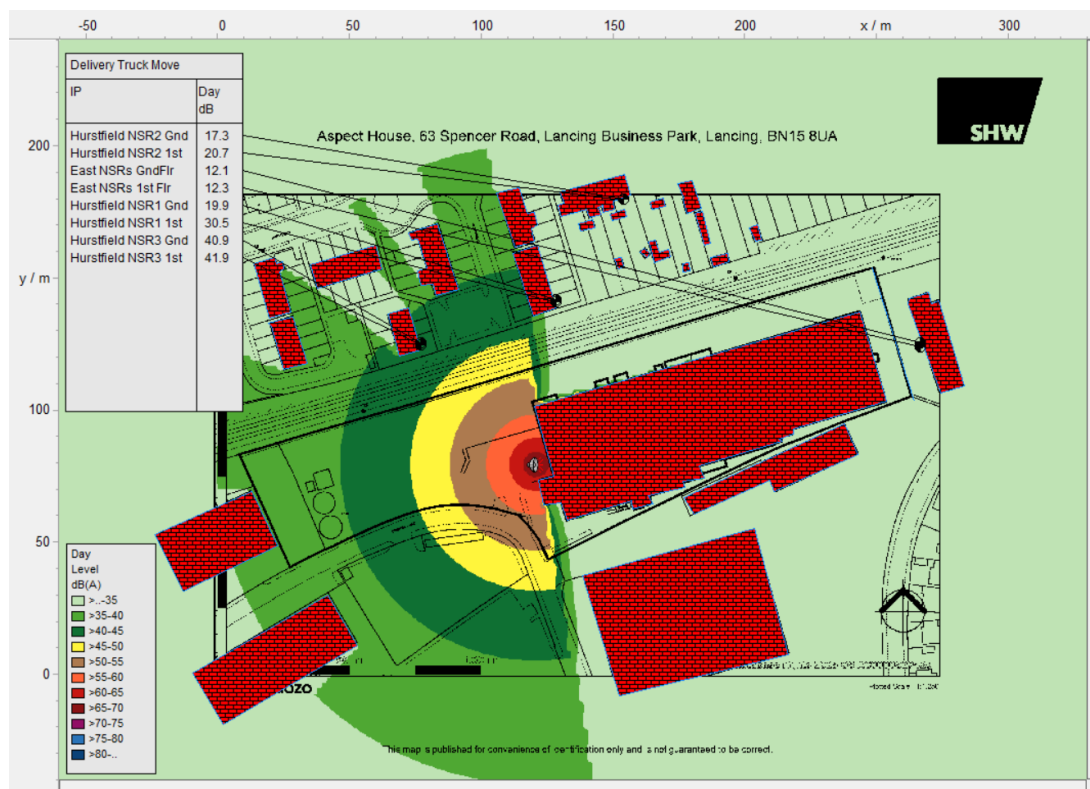
Variant 3 – Daytime



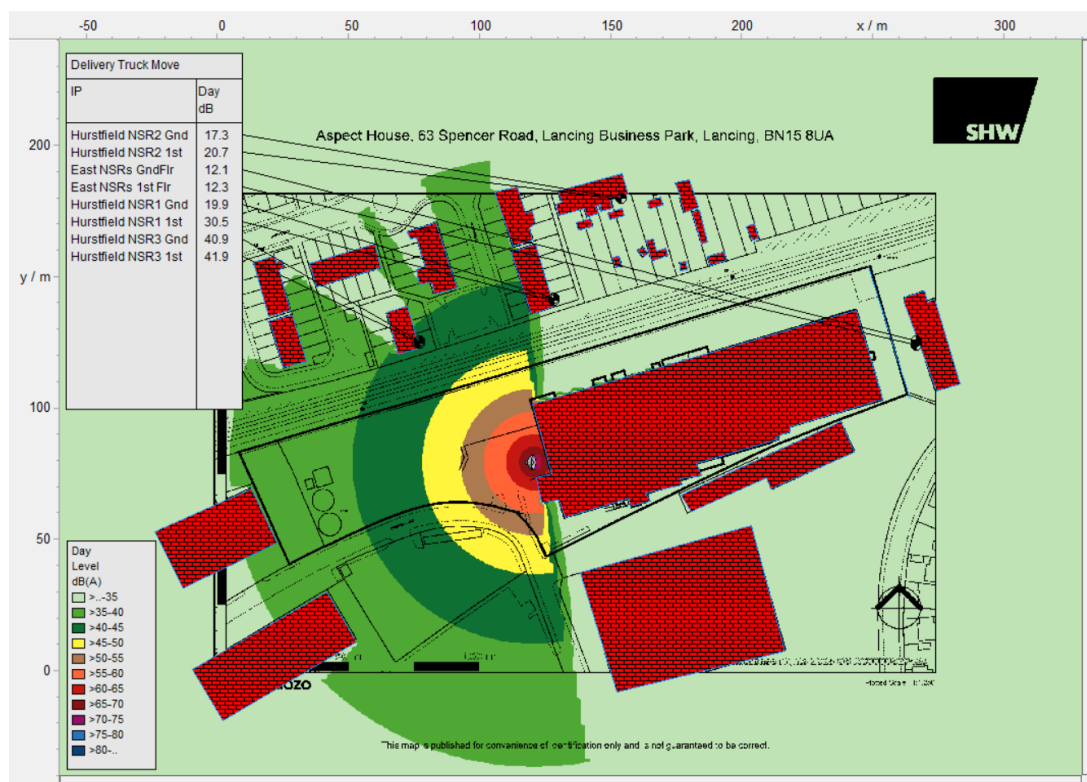
Variant 3 – Night-time



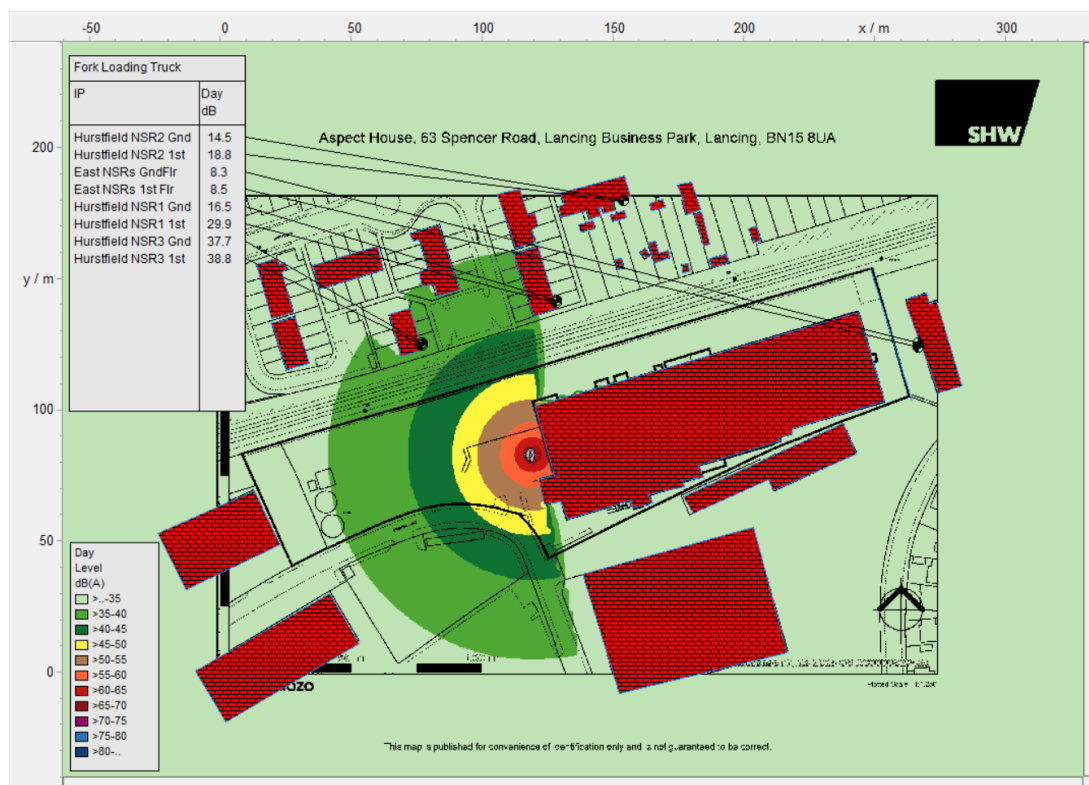
Variant 4 – Daytime



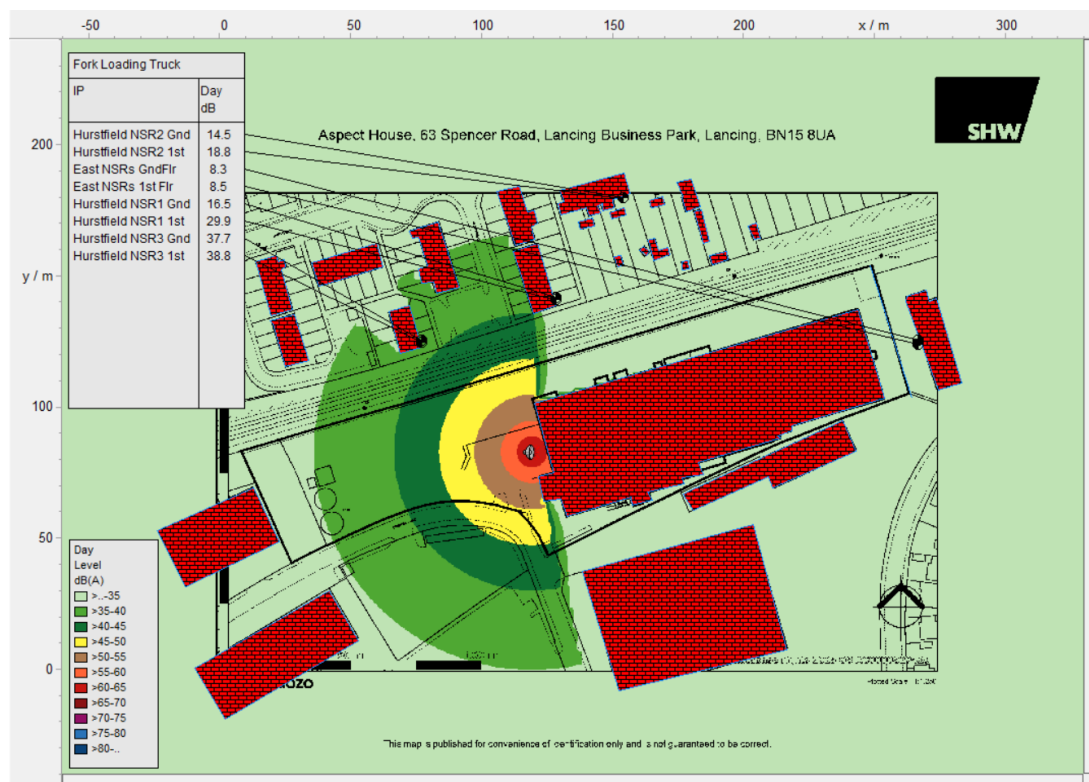
Variant 4 – Night-time



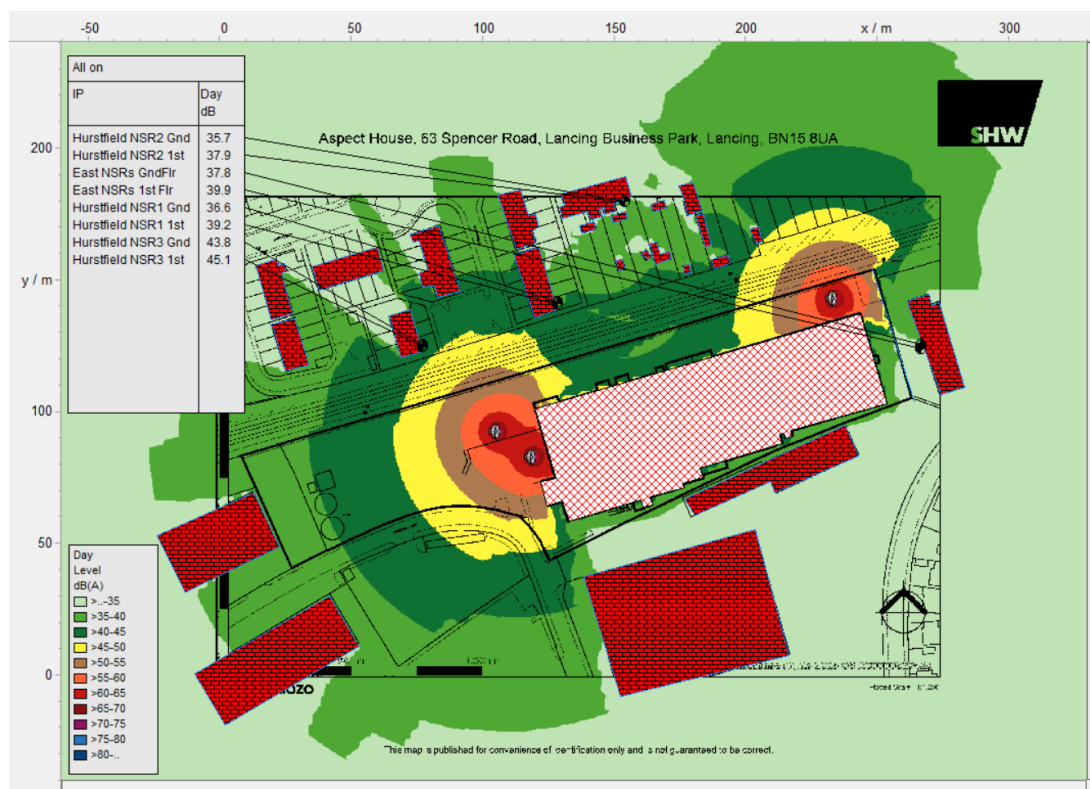
Variant 5 – Daytime



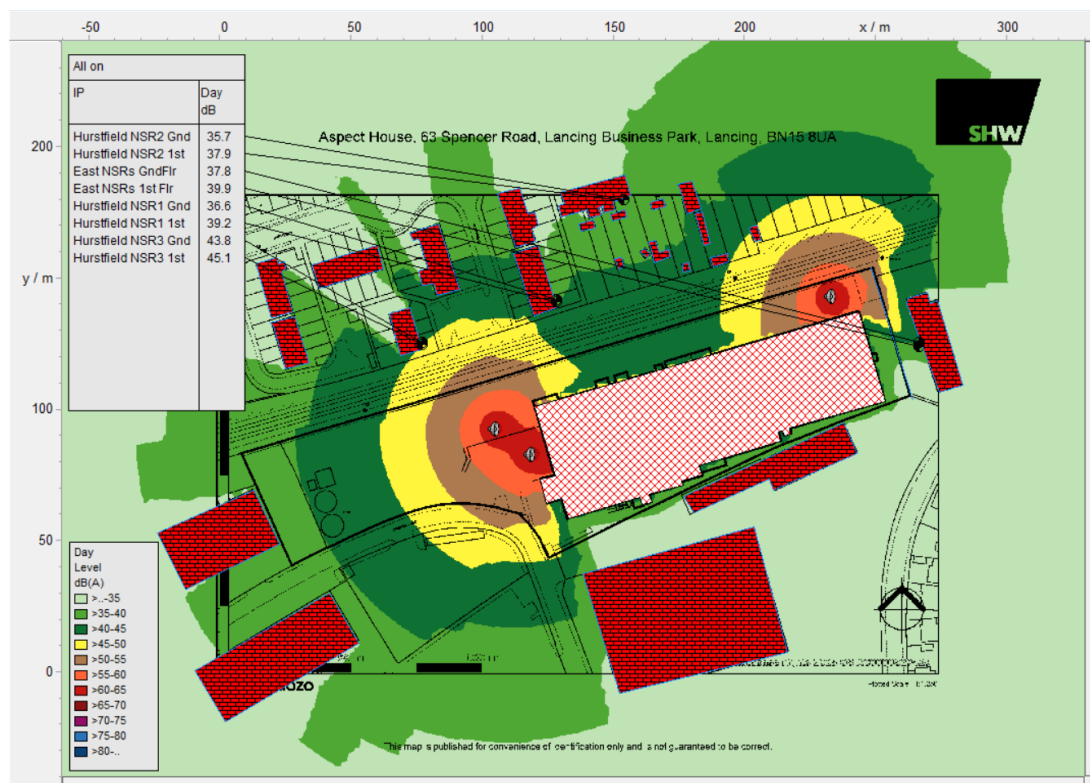
Variant 5 – Night-time



Variant 6 – Daytime



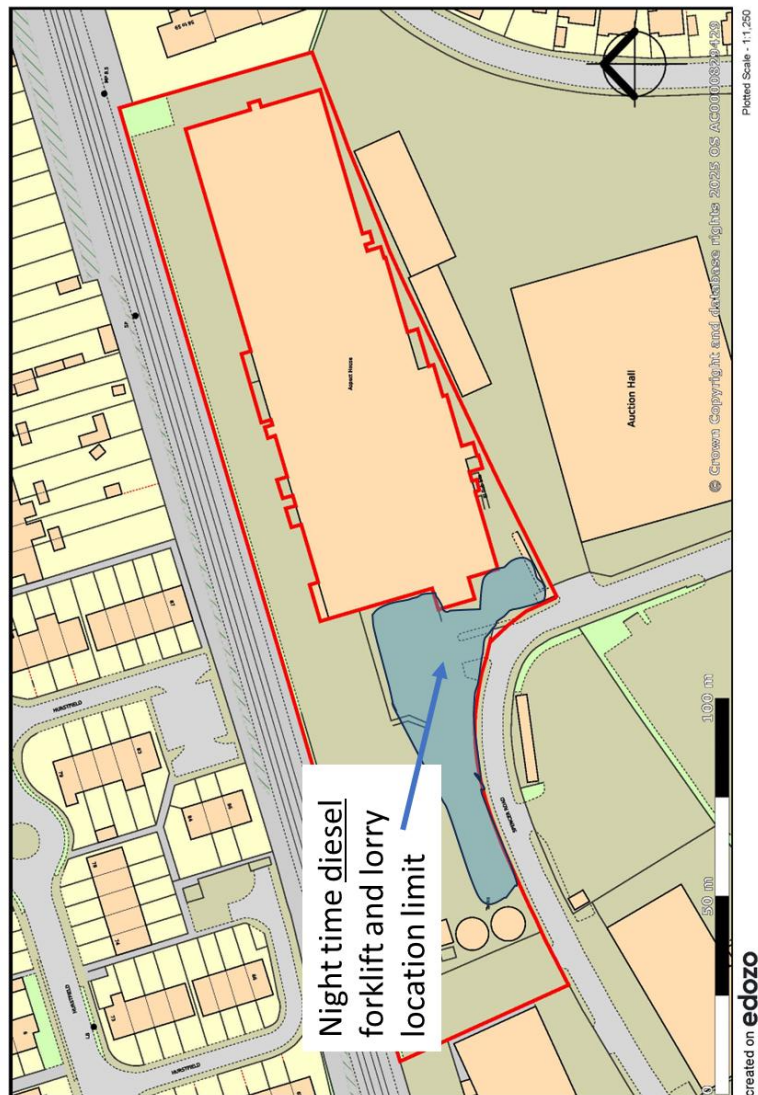
Variant 6 – Night-time



Appendix C – Location where diesel forklifts and lorries should be limited to during the night time hours (23:00 – 07:00)



Aspect House, 63 Spencer Road, Lancing Business Park, Lancing, BN15 8UA



This map is published for convenience of identification only and is not guaranteed to be correct.