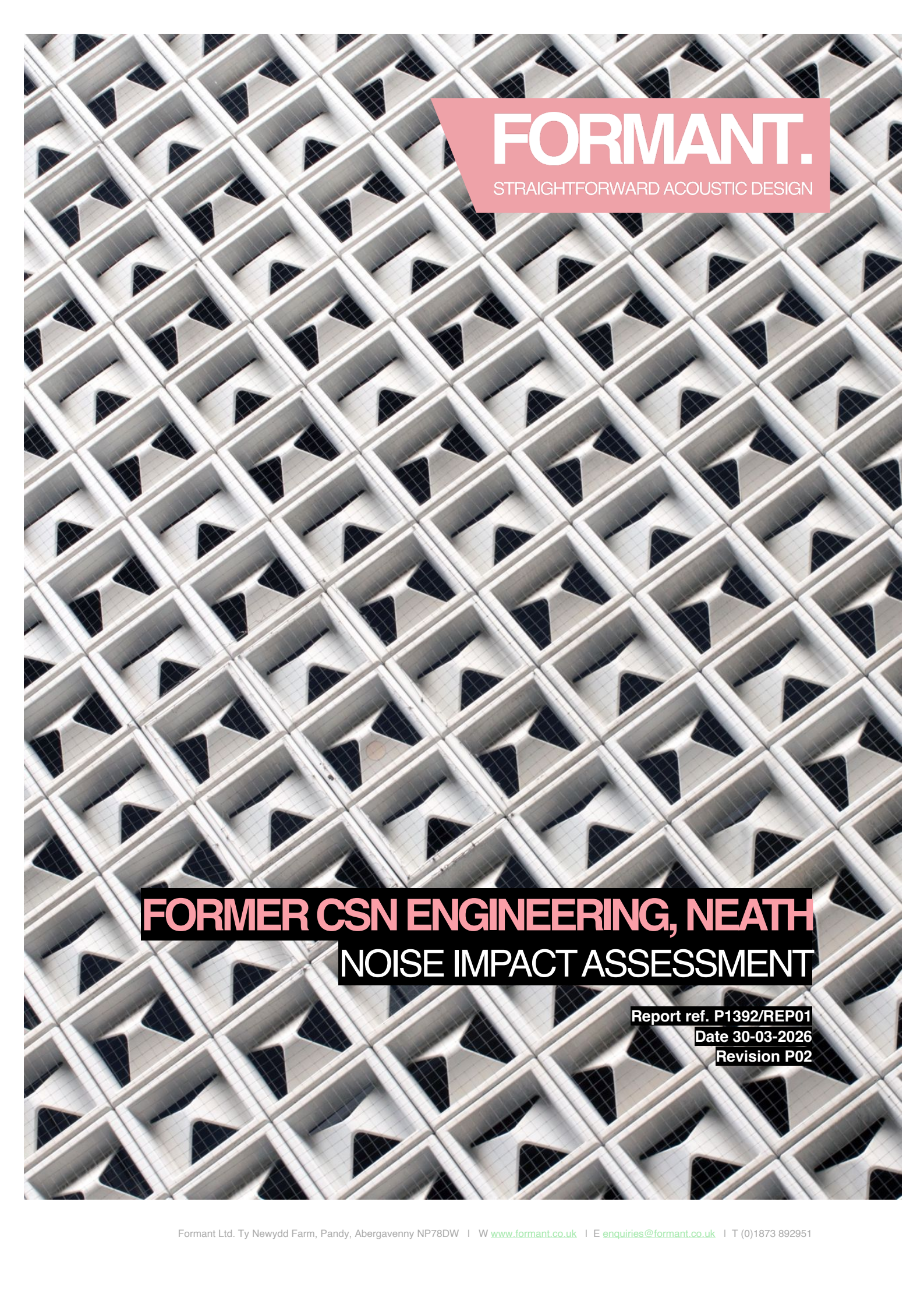




FORMANT.

STRAIGHTFORWARD ACOUSTIC DESIGN

FORMER CSN ENGINEERING, NEATH NOISE IMPACT ASSESSMENT

Report ref. P1392/REP01

Date 30-03-2026

Revision P02



1 INTRODUCTION

Formant has been appointed to review the potential noise impacts arising from the proposed new commercial/light industrial development on land adjacent to CSN Engineering, Neath Abbey Rd, Neath SA10 7BR. The proposed development will comprise two B1/B2/B8 employment buildings divided into four individual demises. The demises will be rented out to businesses whose activities are unknown at this stage.

B1 use class covers businesses which are suitable residential areas so these types of businesses would not normally result in significant noise levels. If the units are used for B2 or B8 classification businesses, these could have potential to generate noise from building services plant (e.g. extract fans or condensers) and commercial activities which adversely affect nearby noise-sensitive receptors (NSRs).

The LPA have provided the following noise-related feedback through the pre-application process:

“The site neighbours a residential estate and therefore, noise levels must be considered, both fixed plant and any noise generating equipment.

• A noise impact assessment in line with BS4142 guidance that assesses any potential noise impacts to neighbouring noise sensitive premises will be required.

• Noise from any fixed plant will need to meet a noise level of 5db below background noise levels.”

This report provides:

- 1) A description of the existing site, the proposed development and its potential noise impacts
- 2) A summary of applicable legislation, policy and guidance
- 3) An assessment of potential noise impacts



2 PROPOSED DEVELOPMENT

2.1 EXISTING SITE

The existing site is bounded by light industrial units to the west, an Aldi superstore to the northwest, residential properties to the northeast and by a patch of scrubland to the south. Beyond the scrubland run a branch railway line and the A465 dual carriageway. The supermarket and light industrial building are not NSRs, therefore the nearest NSRs are the residential properties to the northeast. A site location plan showing the proposed development and nearby NSR is shown in Figure 1 overleaf.

2.2 PROPOSED DEVELOPMENT AND POTENTIAL NOISE IMPACTS

The proposed development involves the construction of new metal clad buildings which will be available for rent for commercial/light industrial uses. The specific uses are not known at this stage therefore we have made the following assumptions for the purposes of this assessment:

- 1) Typical worst-case light industrial workshop inside the buildings could have sound pressure levels up to 90 dBL_{Aeq1hr} during daytime hours. We have conservatively assumed at least half the units on site would be used simultaneously for noisy activities but if the noisy activities take place for a sustained period of time, the main roller shutter doors would be kept closed.
- 2) Typical commercial vehicle movements in the yard would comprise light goods vehicles arriving/departing the site up to 10 times per hour during daytime hours.
- 3) Building services plant (e.g. process extract fans or condensers) might be installed on each unit, located on both the front and rear elevations (a conservative assumption because it is unlikely all units would have plant on both front and rear elevations).

The location of each noise source is shown in Figure 1.

2.3 NOISE MITIGATION

We have worked with the client and design team to develop a design which includes noise mitigation capable of achieving the LPA's noise limits. The following mitigation measures have been included:

- 1) **Noise barrier screening:** Various options were explored to screen the nearby NSRs and the noise model showed that the most effective screening was to 'close off' the gap between the two proposed building via a solid barrier of 3 m height. This was then developed further to incorporate the proposed bin store as a solid building located in the optimum location to screen the residential properties.
- 2) **Fixed plant noise limits:** Fixed building services plant sound power limits of 80/70 dBA (day/night) for plant outside front elevations of the buildings and 70/60 dBA (day/night) for plant outside rear elevations. By splitting the limits for both front and rear locations, the limits allow tenants to install quieter plant on the elevations which face the residential properties (e.g. small extract fans) and restrict noisier items to the front, where they will be better screened by the buildings.
- 3) **Building envelope sound insulation:** The building envelope construction of the proposed new buildings would comprise insulated metal cladding/roofing with mineral wool in-fill providing at least R_w 30 dB with insulated roller shutter doors providing at least R_w 18 dB.

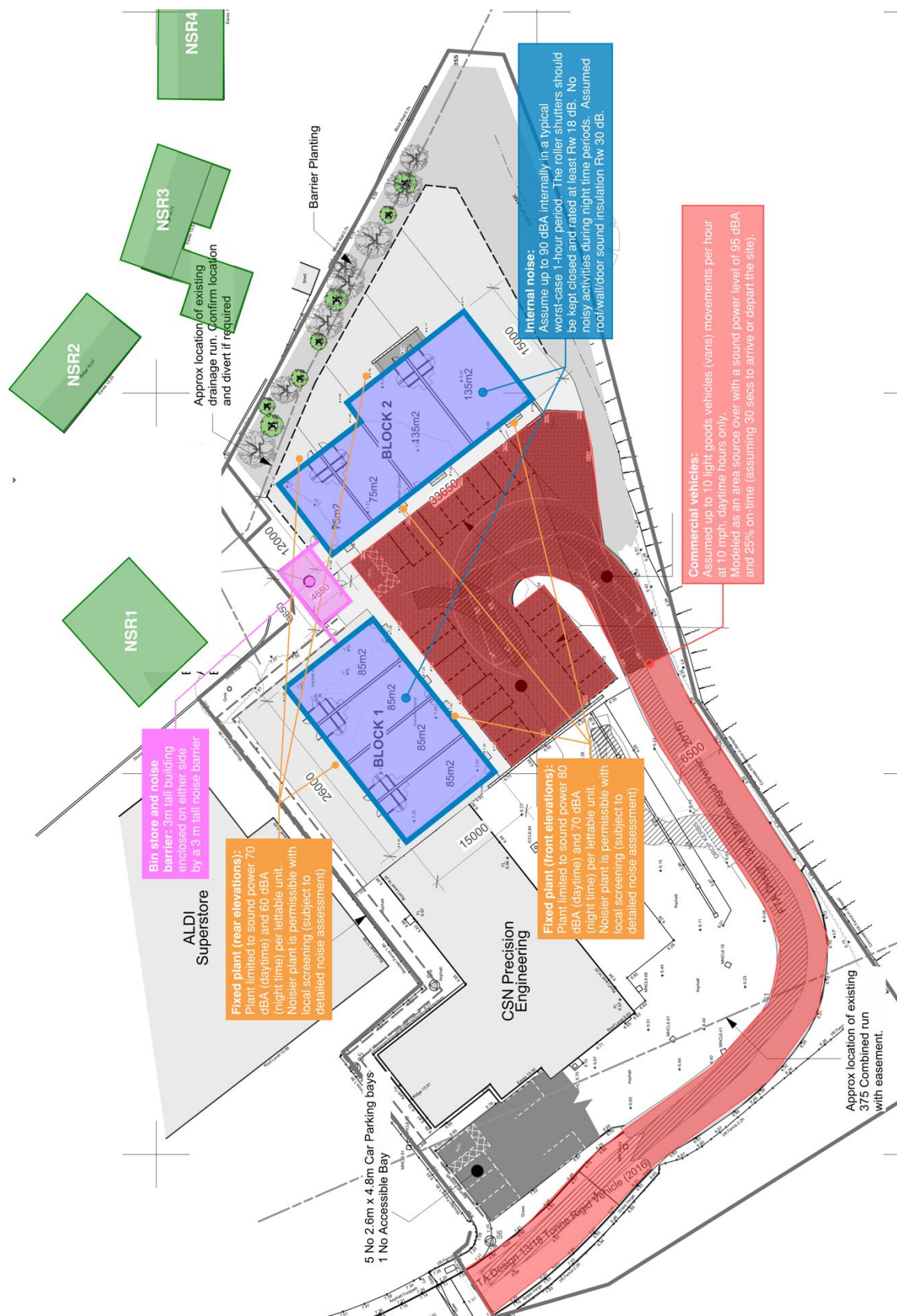


Figure 1: Site layout plan showing the proposed development, nearby NSRs and potential noise sources.

3 LEGISLATION, POLICY AND GUIDANCE

3.1 POLICY

3.1.1 PLANNING POLICY WALES

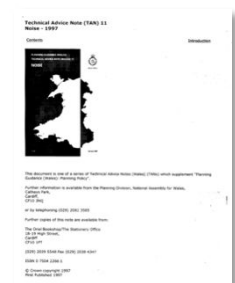
Planning Policy Wales (PPW) sets out the policy framework for all planning applications in Wales. It provides broad objectives to create appropriate soundscapes and manage noise pollution. It states that developers must:

- address any implication arising as a result of its association with, or location within, air quality management areas, noise action planning priority areas or areas where there are sensitive receptors;
- not create areas of poor air quality or inappropriate soundscape; and
- seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes.



3.1.2 TECHNICAL ADVICE NOTE 11 (WALES)

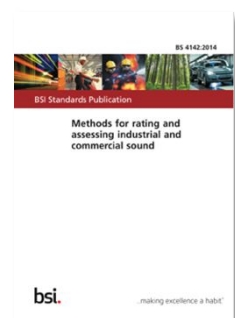
Technical Advice Note (Wales) 11 (TAN11) sets out the Welsh Assembly Government's policies on noise-related planning issues. It sets out the overarching policy context for management of noise within the planning system, in terms of both noise-generating and noise-sensitive developments.



3.2 GUIDANCE

3.2.1 BS 4142:2014

BS4142 provides a method for rating industrial/commercial sound and a method for assessing resulting impacts upon people. The method is applicable to fixed plant installations, commercial/industrial activities in the workshops and commercial vehicle movements within the site boundary. It has been used as the basis for the assessment of noise from these sources.



4 BACKGROUND SOUND LEVELS

A baseline noise survey was undertaken by Sharps Redmore consultants following completion of the adjacent Aldi Superstore (Title: *Fixed plant noise assessment to seek discharge of planning condition 18 of planning permission P2022/0536*, Date: 30th November 2022, Project No: 1918927).

Sharps Redmore undertook measurements at the location of residential property no. 7 Llys-y-Coed. This NSR is one of the nearest NSRs to the proposed development, therefore the Sharps Redmore measurements are deemed suitable for use in determining the representative background sound levels at the site. Figure 3 below shows the location of the measurements.

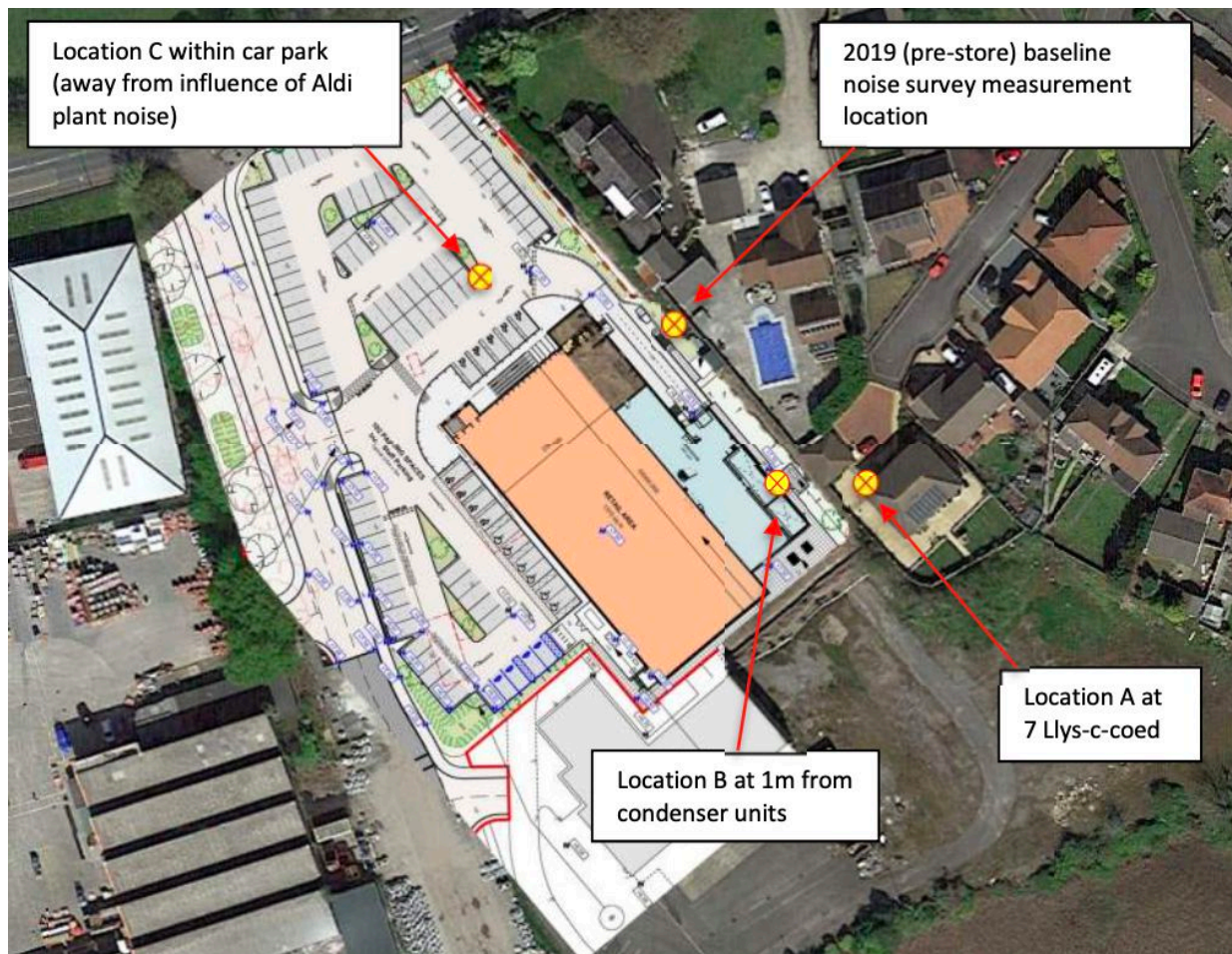


Figure 2: Sharps Redmore survey measurement positions (reproduced from Sharps Redmore report).

Sharps Redmore determined representative background sound levels for use in the noise assessment as follows:

- **Daytime L_{A90} 53 dB** (measured pre-construction)
- **Night time L_{A90} 38 dB** (measured/derived post-construction, excluding contributions from the Aldi plant)

These background sound levels are considered suitable for use in the noise assessment for the proposed development.



5 NOISE IMPACT ASSESSMENT

5.1 BS 4142 ASSESSMENT METHOD

The methodology in BS 4142 has been adopted to assess potential impacts by considering the noise of the plant as experienced at the location of the NSRs and comparing this with the underlying background sound level. The methodology refers to the following types of noise:

1. The **ambient sound level** ($L_a = L_{Aeq,T}$): The equivalent continuous A-weighted sound pressure level of the sound at the assessment location over a given time interval, T
2. The **background sound level** ($L_{A90,T}$): The sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T.
3. The **specific sound level** ($L_s = L_{Aeq,Tf}$): The sound pressure level produced by the specific sound source at the assessment location.
4. The **rating level** ($L_{Ar,Tf}$): The specific sound level plus any adjustment for the characteristic features of the sound (see 'feature corrections' below).

5.1.1 FEATURE CORRECTIONS

BS 4142 states the following regarding tonal and intermittent noise which is audible at the assessment position (i.e. at the NSR location, not at the source):

- **“TONALITY:** For sound ranging from not tonal to prominently tonal ... [apply] a correction of between 0 dB and +6 dB.
- **IMPULSIVITY:** A correction of up to +9 dB can be applied for sound that is highly impulsive.”

5.1.2 IMPACT ESTIMATE

BS 4142 states that an initial estimate of the impact can be obtained by subtracting the measured background sound level from the rating level and considering the following:

- a) “Typically, the greater this difference, the greater the magnitude of the impact.
- b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5 dB 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 sound level, this is an indication of the specific sound source having a low impact, depending on the context.”

The full impact also needs to take account of the site context, therefore the above dB values do not necessarily correspond directly with the noise impact being significant or not.

5.2 COMPUTER NOISE MODEL

A 3D computer noise model of the proposed site has been built using industry standard software iNoise which implements the noise propagation settings in ISO 9613. Noise sources have been

included to represent the potential noise sources described in Section 2.2. The ground factor has been set to 0.6 to represent the soft ground conditions around the site with the proposed yard, access road, parking and the supermarket area being modelled as fully reflective (ground factor 0.0). The screening effect of garages, garden fences and vegetation between the proposed site and NSRs has conservatively not been modelled.

The site topography has been modelled as largely flat, with a 1 m increase in height for the residential NSRs compared to the site. The proposed bin store building and noise barrier have been modelled as a 3 m tall building and reflective noise barrier respectively. Other buildings have been modelled based on the architectural sections. NSR receptor locations have been modelled at a height of 1.5 or 4 m depending on whether they are ground or first floor windows.

5.2.1 NOISE SOURCES

The noise sources used in the model are described below and illustrated in Figure 3:

..... **External plant** a line sources on front/rear elevations of the building, 0.9 m above ground level with sound power levels as shown in Figure 1 with a +6 dB correction to account for 4 no. plant items on each elevation.

 **Commercial vehicles** accessing the workshops. An area source representing the vehicle route into the site. Source sound power based on a generic light goods vehicle traveling at up to 20 mph (96 dBA sound power) with up to 10 no. vehicles per hour taking an average of 1 minute to pass through the yard (i.e. 6.7% on-time) during daytime hours only.

— — **Workshop activities** within the proposed buildings. Modelled as façade/roof sources on each external wall and roof with 90 dBA internal noise, R_w 30 dB sound insulation and a 3 dBA reduction to reflect only half the units operating at peak noise levels simultaneously. Roller shutters have been modelled similarly, as 2.8 m tall area sources with R_w 18 dB sound insulation.

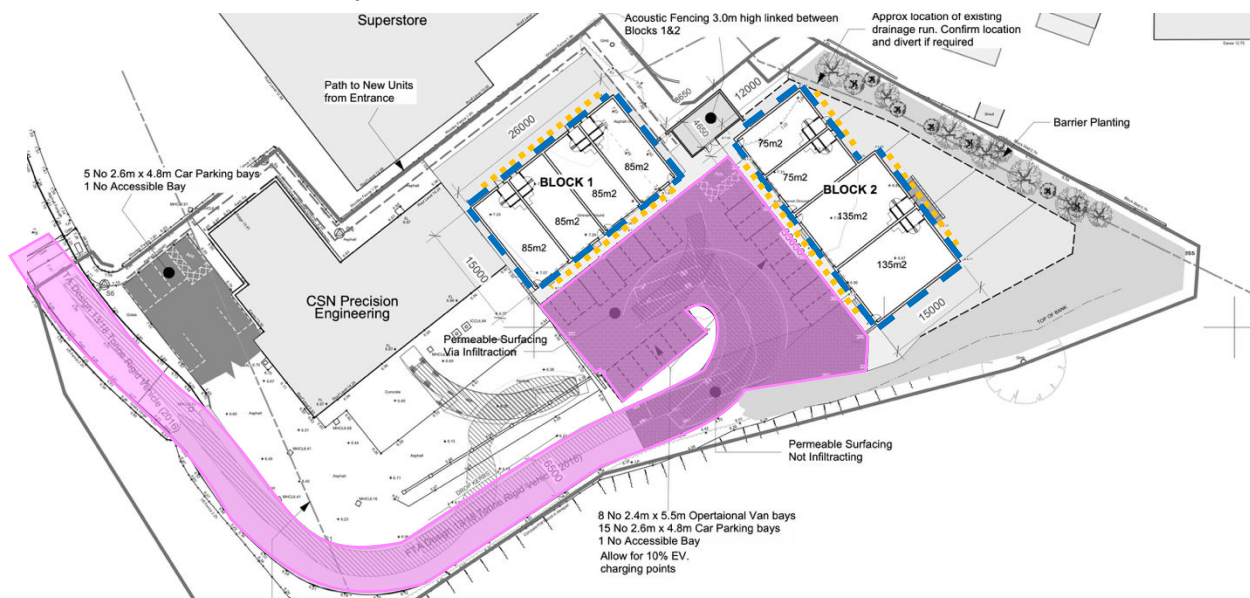


Figure 3: Proposed site plan showing modelled noise sources



5.3 SPECIFIC SOUND LEVELS

The results of the computer noise model have been used to predict the specific sound level from each individual source at the nearest NSR location and the results are shown in Table 4 and Figures 5/6:

NSR	Noise source	Daytime (0700-2300 hrs)		Night (2300-0700 hrs)	
		Specific sound level (dBA)	Compare to background (53 dBA)	Specific sound level (dBA)	Compare to background (38 dBA)
1	Workshops	43.2	-9.8	n/a	n/a
	Fixed plant	42.5	-10.5	31.4	-5.5
	Vehicles	34	-19.0	n/a	n/a
	Cumulative	46.1	-6.9	31.3	-5.5
2	Workshops	40.5	-12.5	n/a	n/a
	Fixed plant	40.4	-12.6	29.5	-7.6
	Vehicles	28.2	-24.8	n/a	n/a
	Cumulative	43.6	-9.4	29.5	-7.6
3	Workshops	40.4	-12.6	n/a	n/a
	Fixed plant	41.6	-11.4	31.5	-6.4
	Vehicles	22.7	-30.3	n/a	n/a
	Cumulative	44.1	-8.9	31.5	-6.4
4	Workshops	34.7	-18.3	n/a	n/a
	Fixed plant	35.4	-17.6	25.1	-12.6
	Vehicles	21.2	-31.8	n/a	n/a
	Cumulative	38.2	-14.8	25.1	-12.6

Table 1: Specific sound levels at each NSR and comparison with background levels

5.4 RATING LEVELS

The worst-case daytime specific sound level from a single individual noise source is 37 dBA which is 16 dBA below the background level. At night the worst-case is 30 dBA which is 8 dBA below the background level.

At these levels, even if the noise sources exhibited qualities which could incur BS 4142 feature corrections, the features will likely be inaudible over the underlying background level, therefore no feature corrections are required. This means that the specific sound levels shown in Table 1 are effectively equal to the rating level for each NSR.

The predicted cumulative rating levels are **at least 6.9 dB below the background levels during daytime and 5.5 dB below background during night time at the NSRs**. In line with BS 4142, this is considered a **'low impact'** depending on the context.

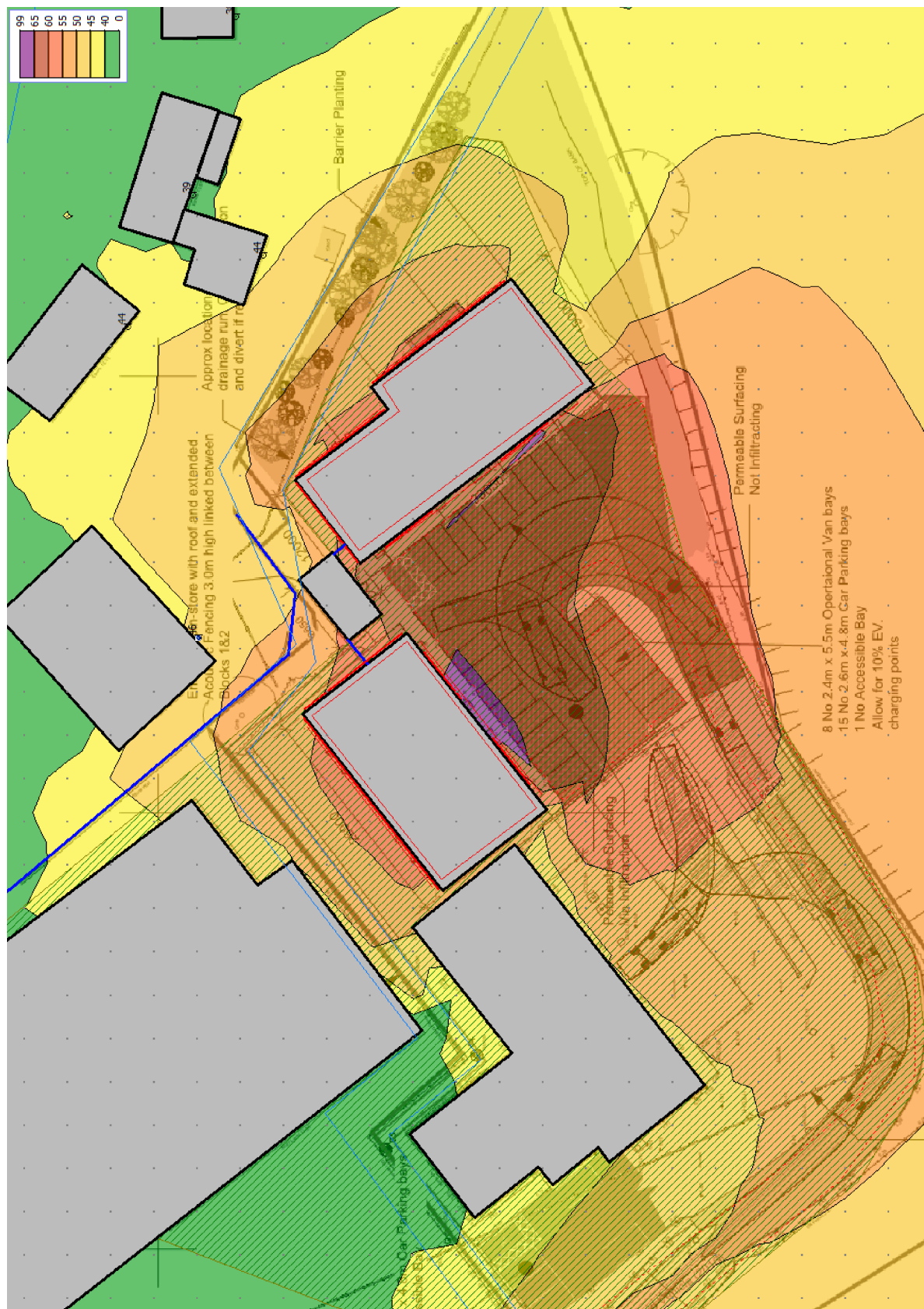


Figure 4: Daytime noise contour plot for proposed development specific sound levels (at 4 m above ground)

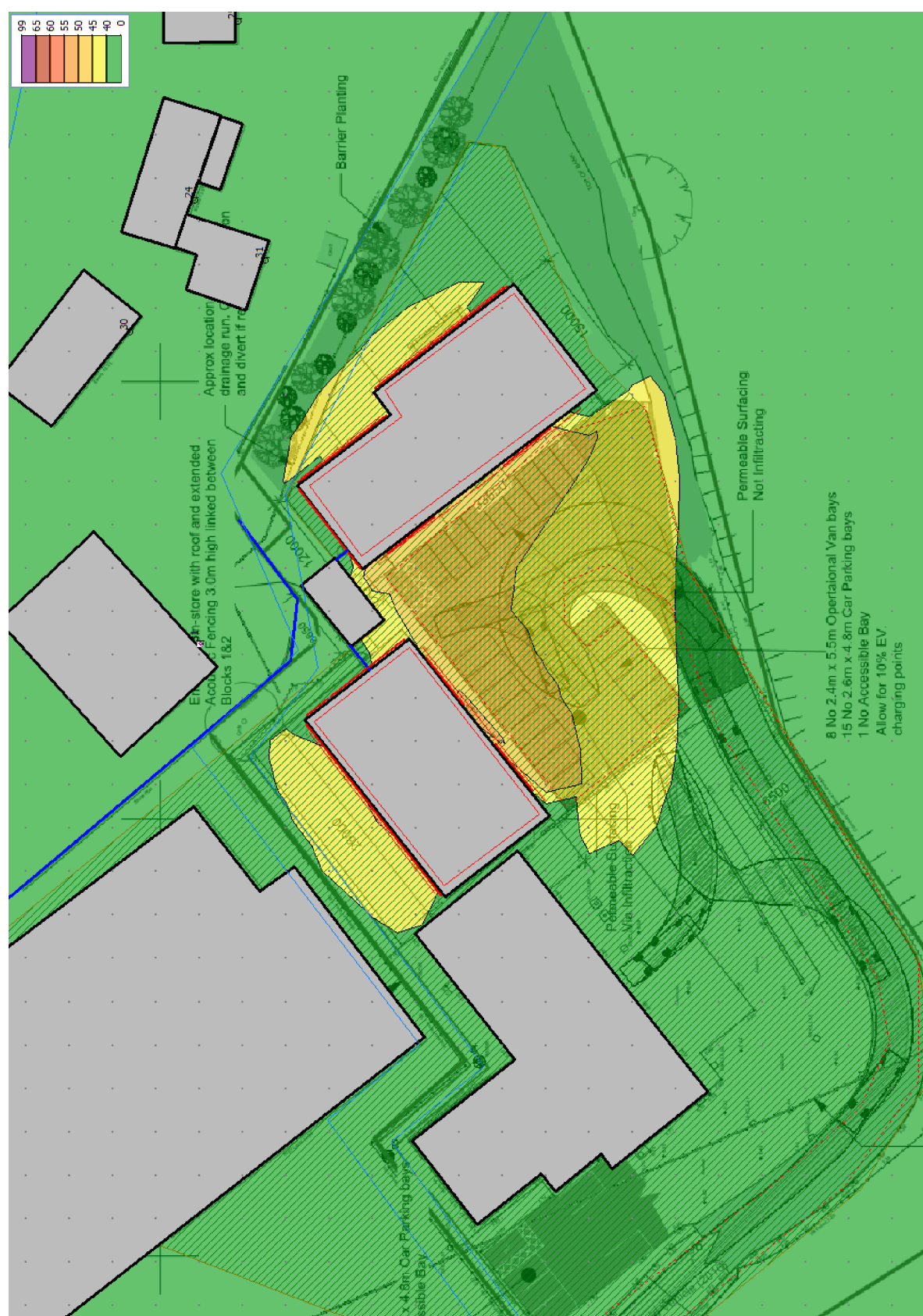


Figure 5: Daytime noise contour plot for proposed development specific sound levels (at 4 m above ground)



5.5 SITE CONTEXT

The existing NSRs are already exposed to commercial/industrial noise of a similar nature from the existing commercial and industrial sources in the immediate area surrounding the site. As such the proposed development is not introducing a new noise source into the existing soundscape. The residential NSRs are also exposed to fairly high levels of traffic noise during daytime hours as evidenced by the background sound levels measured at the site.

On the basis of the above, site context does not change the outcome of the initial assessment and a **low impact** is predicted.

5.6 SUMMARY OF BS 4142 ASSESSMENT

The BS 4142 assessment shows that the predicted rating levels from the individual noise sources are more than 5 dBA below the representative background sound level at the NSRs during daytime and night time periods. In line with BS 4142, these rating levels are indicative of a 'low impact', including consideration of the context of the site.

The predicted rating sound levels are also compliant with the LPA requirement for rating sound levels from fixed plant to be at least 5 dB below background.

In conclusion, **no significant adverse impacts are predicted at the NSR locations as a result of the proposed development**

Our recommendation to the decision maker is that planning permission may be granted, with a suitably worded planning condition to cover the provision of the building envelope sound insulation performance specifications and the plant noise limits described in Section 2.3 of this report.