



Sandfields Young Business Centre

Endeavour Close, Port Talbot, SA12 7PT

Noise Impact Assessment

22nd July 2025

First Issue



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Revision History

Version	Comments	Author	Checked By	Date
First Issue	First issued version of the report	Patrick Shuttleworth Acoustic Consultant BSc (Hons) MIOA	Chris Parker-Jones Director and Acoustic Consultant BSc (Hons) MSc MIOA	22nd July 2025

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Executive Summary and Conclusions

ParkerJones Acoustics Limited (PJA) has been instructed to undertake a Noise Impact Assessment (NIA) for the proposed new business units at Sandfields Young Business Centre, Endeavour Close, Port Talbot, SA12 7PT. Proposals are for the erection of 5 new business units with associated works.

The objective is to ensure that the risk of noise impact will be controlled sufficiently. This is based upon ensuring that the noise emissions from the development will not cause a significant increase in existing background noise levels outside noise-sensitive receptors (residential properties) in the surrounding area, once it is fully operational.

Therefore, the noise emissions from the proposed development have been assessed following a BS 4142:2014+A1:2019 methodology, based upon existing background noise levels determined by a baseline noise survey and subsequent predictions of the noise emissions using a detailed 3D noise model – based on an indicative worst-case scenario.

In summary, the assessment has been made against minimum background noise levels measured from the survey within anticipated operating hours of 07:00 – 19:00 Monday to Friday and 08:00 to 17:00 on Saturdays, recording a minimum value of 31 dB $L_{A90,15min}$ (see **Section 4.0**).

The predicted specific noise level during the worst-case 1-hour period is 28 dB $L_{Aeq,1hr}$, with a rating level of 31 dB $L_{Ar,Tr}$ after applying a character correction of 3 dB. This is equal to the minimum background noise level at the nearest residential receptor (see **Section 5.0**).

BS 4142:2014+A1:2019 implies that a rating level that does not exceed the background sound level is generally an indicator that the level of impact is acceptable.

The predicted specific noise levels are also comfortably within the required range to meet the external noise limits specified by the WHO, and would equate to compliance with the BS 8233 internal noise criteria when receptor windows are open (assuming a typical 15 dB reduction) by a comfortable margin.

Section 6.0 also sets appropriate noise limits for any future external plant that may be installed by individual business units, to ensure that emissions remain controlled even if additional plant is introduced at a later stage.

These conclusions demonstrate that the proposed development should be able to operate with an acceptably low level of noise impact on local residents.

Nonetheless, PJA would suggest the implementation of a **Noise Management Plan**, to ensure that the risk of impact remains low and that any complaints are logged and dealt with accordingly, see **Section 7.0**.

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1.0 Introduction

ParkerJones Acoustics Limited (PJA) has been instructed to undertake a Noise Impact Assessment (NIA) for the proposed new business units at Sandfields Young Business Centre, Endeavour Close, Port Talbot, SA12 7PT. Proposals are for the erection of five new business units with associated works.

This NIA Report has been written to assess the impact of noise 'pollution' generated by the proposed development on noise-sensitive receptors (residential properties) in the surrounding area, once it is fully operational. The objective is to ensure that the risk of noise impact will be controlled sufficiently. This is based upon ensuring that the noise emissions from the development will not cause a significant increase in existing background noise levels outside nearby residential properties once operational.

Therefore, the purpose of this report is to determine what the existing ambient and background noise levels are at the site and surrounding residential receptors; set appropriate noise level criteria based upon these pre-existing levels and other recognised residential noise guidelines; and finally, demonstrate whether the development can be designed to mitigate noise levels to meet these noise level limits successfully – and if not, provide recommendations on how to mitigate the impact to an acceptable level.

Whilst every attempt has been made to ensure that this report communicates effectively to a reader who might not have much knowledge of acoustics, some parts are necessarily technical. A glossary of acoustic terminology and concepts is provided in **Appendix A**.

The assessment has been made with reference to several guidelines, including:

- TAN 11 - 'Technical Advice Notes (Wales) 11, Noise – October 1997';
- BS 4142:2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*', which assesses the risk of adverse impact of noise pollution from a sound source (or sources) of a commercial or industrial nature;
- BS 8233:2014 '*Guidance on Sound Insulation and Noise Reduction for Buildings*'; and
- the WHO *Environmental Noise Guidelines for the European Region*.

These standards are commonly used across the UK to assess noise impacts on residential properties, and impacts arising from noise sources of a commercial/industrial nature.

2.0 Site and Development Description

The proposed development is a planning application with Neath Port Talbot County Borough Council for the erection of five business units and associated works at the Sandfields Young Business Centre, located off Endeavour Close within the Purcell Avenue Industrial Estate, Port Talbot, SA12 7PT.

As shown in **Figure 2.1**, the site currently comprises a fenced car park serving the existing business centre, with some small ancillary structures such as a bike shelter. The plot is approximately 60 metres long (east–west) and 40 metres wide (north–south), with palisade fencing along the northern, eastern, and western boundaries.

As seen in **Figure 2.1** and the site location plan in **Figure 2.2**, the site is bounded by Endeavour Close to the north and west, an industrial unit occupied by Macmillan Distribution to the east, and the Sandfields Young Business Centre to the south. The surrounding area is predominantly industrial and commercial in nature, forming part of a wider estate.

The proposed scheme involves the construction of a single-storey commercial building housing five individual business units, positioned along the northern boundary of the site. The remainder of the site will accommodate hardstanding for vehicle parking, access, and circulation. Proposed block plans, elevations and floor plans are shown in **Figures 2.3 to 2.5**.

The building will be constructed using a steel profile cladding roof, brickwork to the front and side elevations, and vertically laid steel cladding to the rear above a brick plinth. External doors are aluminium-faced with glazed panels. At this stage, no confirmed occupiers have been identified, but the application indicates that the five units would accommodate five separate businesses. Therefore, a precautionary worst-case approach has been adopted for this assessment, which includes potential noise emissions from:

- The movement of vehicles across external hardstanding;
- Loading and unloading activity associated with the five units;
- Internal operations and noise breakout through the building envelope or open doors.

There is not any external plant at this stage of the design, hence it is expected that future occupants may be required to submit a further planning application (with noise assessment) as and when the plant is installed. This report provides maximum noise limits for any future plant, on which the assessment should be based.

It is anticipated that the site would likely operate between 07:00 – 19:00 Monday to Friday and 08:00 to 17:00 on Saturdays.

The nearest noise-sensitive receptors (NSRs) are residential properties on Purcell Avenue to the south. The closest of these lie approximately 110 metres from the site boundary (to the front garden), with other buildings within the industrial estate situated between.

Figure 2.1 – Site location and surrounding area



Figure 2.2 – Site location plan

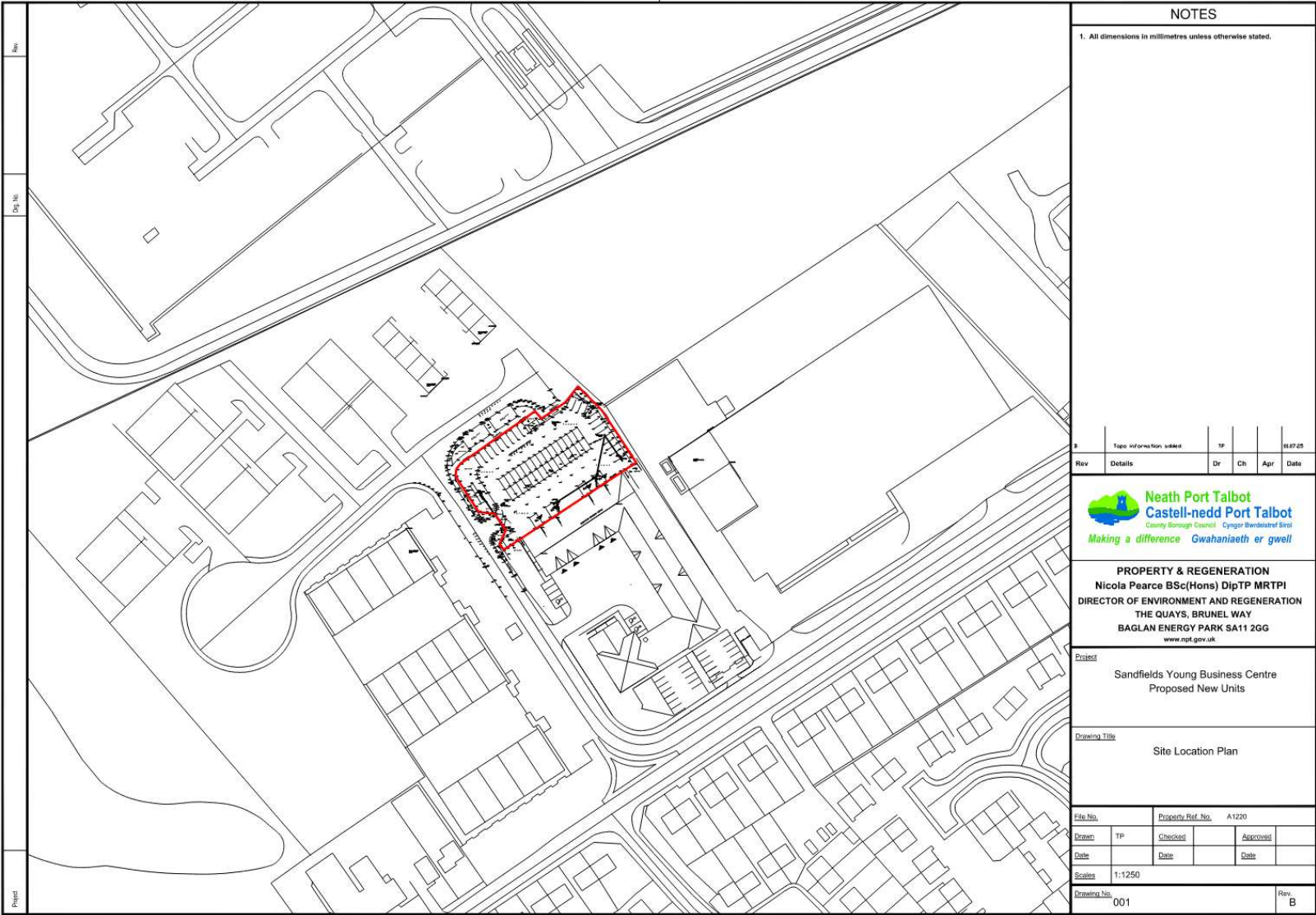


Figure 2.3 – Proposed block plan

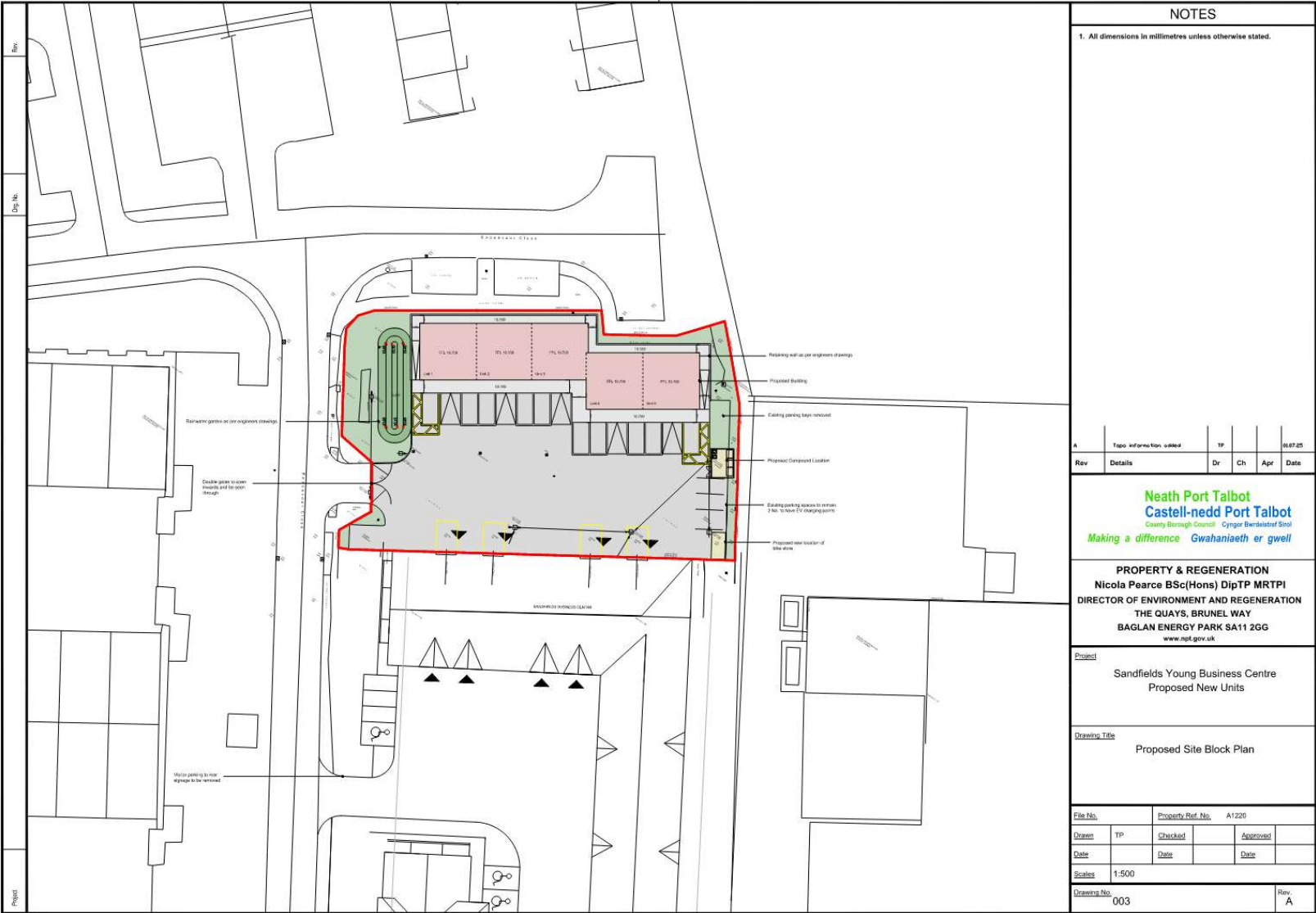


Figure 2.4 – Proposed elevations

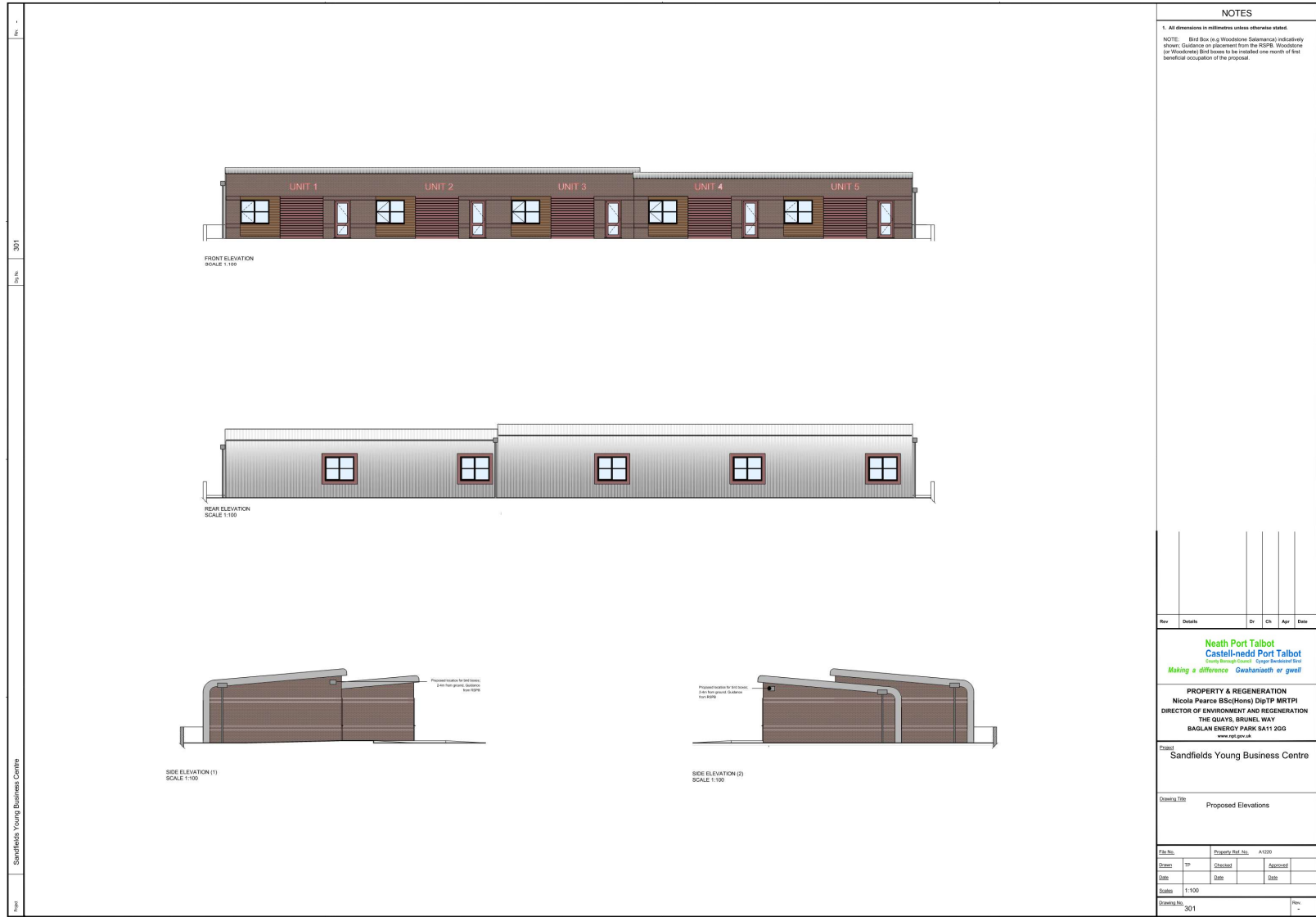
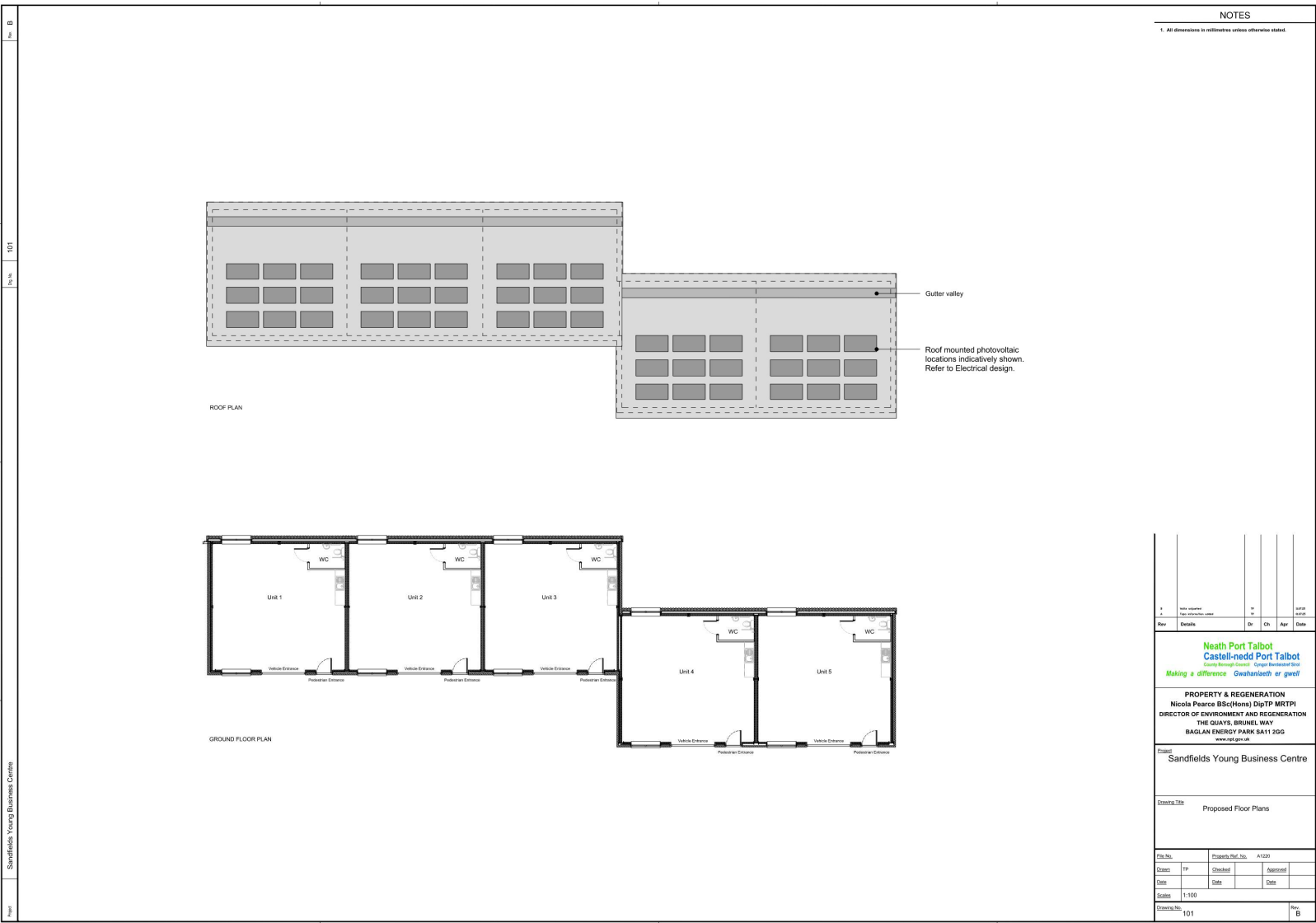


Figure 2.5 – Proposed ground floor and roof plans



3.0 Relevant Guidelines

3.1 Technical Advice Note 11 (TAN 11)

'Technical Advice Notes (Wales) 11, Noise – October 1997' gives guidance on the control of noise to sensitive developments which may be affected by noise and vice versa. With regards to noise generation from industrial sites, it states:

"B17. The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the "rating level" defined in BS 4142. This "rating level" should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise.

The Standard states that, 'A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance'. Since background noise levels vary throughout a 24 hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (e.g. day and night) chosen to suit the hours of operation of the proposed development. Similar considerations apply to developments that will emit significant noise at the weekend as well as during the week. In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233:1987."

3.2 BS 4142:2014

BS 4142:2014 'Methods for rating and assessing industrial and commercial sound' is intended to be used to assess the potential adverse impact of sound of an industrial and/or commercial nature, at nearby noise-sensitive receptor (NSR) locations (i.e. residential windows) within the context of the existing sound environment.

The method is based upon assessing the predicted noise emissions from plant/equipment against the existing background sound levels at NSRs, the latter of which is determined by a noise survey conducted at the site.

The predicted noise emissions are termed as a 'rating level', which is the 'specific sound level' from plant (the actual measurable noise level), plus 'penalties' which account for whether the noise has distinguishing characteristics such as tonality, intermittency, impulsivity, or is generally distinguishable from the ambient noise environment. Such features may attract attention and be considered annoying, hence sounds with these qualities should be penalised over sounds at the same specific noise level which is less intrusive.

The general aim is for the 'rating level' (plant noise emissions) to not exceed the existing background sound levels outside of residential windows. BS 4142:2014 states that *"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."*

Appendix B explains the methodology in further detail.

3.3 BS 8233:2014

BS 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' suggests appropriate criteria and limits for different situations. This includes internal noise criteria for residential developments. The limits with BS 8233:2014 are similar to those in the WHO's 'Guidelines for Community Noise and Night Noise Guidelines for Europe' document.

Table 4 of BS 8233:2014 provides internal ambient noise level (IANL) limits for dwellings from "steady external noise sources". These are summarised in **Table 3.1** below.

Table 3.1 – BS 8233:2014 internal ambient noise level (IANL) upper limits

Activity	Location	Daytime (07:00 – 23:00)	Nighttime (23:00 – 07:00)
Resting	Living Room	35 dB L _{Aeq,16hr}	-
Dining	Dining Room/Area	40 dB L _{Aeq,16hr}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq,16hr}	30 dB L _{Aeq,8hr}

Annex G.1 of BS 8233:2014 suggests that "if partially open windows were relied upon for background ventilation, the insulation would be reduced to approximately 15 dB". Therefore, a noise limit directly outside of the nearest residential windows could be set based on the values above plus 15 dB.

Therefore, to meet internal noise targets in nearby residential dwellings, noise from the proposed plant should not exceed 50 dB L_{Aeq} during the daytime and 45 dB L_{Aeq} during the nighttime when measured/calculated directly outside of a residential bedroom or living room window.

3.4 World Health Organisation (WHO) Environmental Noise Guidelines

The WHO document *Guidelines for Community Noise 1999* has recently been superseded by the *Environmental Noise Guidelines for the European Region*. However, the updated guidance states that 'all WHO guidelines for community noise (CNG) indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid'.

The document sets out guidance as to noise levels at which there will be an unacceptable impact on the local community. WHO guidelines state:

- To protect the majority of people from being seriously annoyed during the daytime, the sound pressure level on balconies, terraces and outdoor living areas should not exceed 55 dB L_{Aeq} for a steady, continuous noise.
- To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound pressure level should not exceed 50 dB L_{Aeq}.

4.0 Baseline Noise Survey

4.1 Methodology

PJA has attended the site and surrounding area to conduct a baseline noise survey between Thursday the 10th and Wednesday the 16th of July 2025.

One fixed monitoring position was installed as per the location in **Figure 2.1**. The location is at the western boundary of the existing Sandfield Business Centre. Although the microphone is located at some distance from the affected receptor locations, *minimum* background noise levels at the monitoring position are seen to be marginally lower due to higher levels of screening from the major roads to the north-east. As such, this is seen to provide a robust assessment of noise impact.

The sound level meter was set to log noise levels over continuous 15-minute averaging periods with a 1-second time history rate. The monitoring equipment was left unattended for the majority of the survey with the exception of a short period around the installation and collection of the equipment.

The following noise indices were recorded (amongst others):

- $L_{Aeq,T}$: The A-weighted equivalent continuous noise level over the measurement period T. This parameter is typically considered as a good representation of the average ambient sound level;
- $L_{AFmax,T}$: The maximum A-weighted noise level during the measurement period T and the best representation of short high noise levels 'events' – i.e., emergency services sirens; and
- $L_{A90,T}$: The A-weighted noise level that is exceeded for 90% of the measurement period T. This parameter is often considered as the 'average minimum level' and is therefore used in determining the representative background noise level – or noise levels from continuous noise sources such as plant.

Appendix C contains further information on the equipment used and the weather conditions at the time of the survey.

4.2 Results

Subjectively, background noise levels at the site are affected by distant road traffic, with intermittent contributions to ambient noise levels from the surrounding commercial / industrial uses.

Table 4.1 summarises the results – during the hours corresponding with the anticipated operating times of the proposed units (07:00 to 19:00 Monday to Friday, 08:00 to 17:00 Saturday).

The most relevant parameter in terms of the 'representative background sound level' referenced in BS 4142:2014 is the $L_{A90,15min}$. A minimum value of 31 dB $L_{A90,15min}$ has been recorded during the proposed operational hours.

Table 4.1 – Summary of measured noise levels – Operational period

Parameter	Maximum	Minimum	Logarithmic Average	Mean Average	Modal Average	Median Average
L_{Aeq} (dB)	70	44	58	54	54	54
L_{AFMax} (dB)	107	65	N/A	76	70	76
L_{A90} (dB)	42	31	N/A	36	35	35

5.0 Assessment

5.1 Methodology

The assessment has been undertaken in accordance with BS 4142:2014+A1:2019. The following summarises the main steps of action in the assessment method:

- a representative background sound level $L_{A90,Tr}$ is determined based on the results of the noise survey;
- the specific sound level L_s from operations at the development at 1m outside nearby residential windows are predicted by noise map calculations;
- the rating level $L_{Ar,Tr}$ is determined by the application of any 'penalties' which adjust for characteristic features of the sound which may be perceptible and potentially cause annoyance;
- the predicted rating level $L_{Ar,Tr}$ is compared to the representative background sound level $L_{A90,Tr}$ to determine the likely level of impact in accordance with BS 4142:2014+A1:2019;
- the predicted specific noise levels are also compared against the guidelines of the WHO and BS 8233:2014 to provide further 'context' to the results (as referenced by BS 4142);
- if necessary, mitigation measures are recommended to reduce the predicted rating level.

5.2 Representative Background Sound Levels

In accordance with BS 4142:2014, the predicted rating level should be assessed against a 'representative' background sound level. This is commonly determined through the results of a baseline sound survey, as has been done in this case.

BS 4142:2014 states that *"in using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods."* BS 4142:2014 further states that *"a representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either minimum or modal value"*.

In this case, in order to provide the most robust assessment, the minimum value of $L_{A90,15min}$ has been derived during the operational period – as listed in **Table 5.1**.

Table 5.1 – Representative background sound level $L_{A90,1hr}$ at nearby residential NSRs

Noise-Sensitive Receptor (NSR)	Period	Representative Background Sound Level $L_{A90,1hr}$ (dB)
1m outside of all residential windows and 1.5m above ground level in external amenity areas (gardens, patios)	Operating hours 07:00 to 19:00 Monday to Friday 08:00 to 17:00 Saturdays	31

5.3 Noise Sources

5.3.1 Internal

Internal Noise Levels – Storage Areas

PJA has conducted BS 4142 assessments and Noise at Work assessments for various types of light industrial/commercial use, i.e.: workshops including metal and timber processing; builders' merchants; car servicing/MOT centres, food production facilities, manufacturing/processing facilities, and retail warehouses.

This includes assessments at storage/warehouse and production/distribution centres ¹; and various manufacturing facilities ² working with metal, i.e., using CNC machines, fettling equipment, heat treatment, welding, etc.

When conducting measurements in general areas of a class B1 or B8 use, PJA generally finds that noise levels can reach as high as 80 - 85 dB when measured at the employees' ear, when that employee is operating noisy machinery/utilising a noisy hand tool for short, intermittent periods. This is usually quieter when measured inside the external wall, inside the roof, inside the doors, etc, rather than the employees' ear, which is typically right beside noisy processes (i.e., using hand tools), at around 70 – 75 dB $L_{Aeq,1hr}$.

PJA generally finds that noise levels on average, fluctuate between 60 dB $L_{Aeq,1hour}$ and 75 dB $L_{Aeq,1hr}$ at the outskirts of a storage space (the higher range being with forklifts in are in near continuous use inside the building). For the purpose of assessment, **PJA has taken the noise level incident on the inside of the façade to be 75 dB $L_{Aeq,1hr}$.**

1 - Including two sites for HelloFresh, Tillery Valley Foods Ltd, and VWR International Ltd UK.

2 - Including two sites for Aeromet International (manufacturer of metal components for aircraft), Croylek Limited and S&S Sheet Metal Limited (both working with sheet metals), Feorge Plant & Fabrications (steel fabrication and plant repair), Ashton Aluminium and Glazing, and Vestas (manufacturer of wind turbines).

Building Envelope

Table 5.2 presents the estimated sound reduction indices of the walls, roof, and doors, based on the description given in the Design and Access Statement. In this case, in order to provide the most robust assessment, it is assumed that all roller shutter doors are open, with standard doors remaining closed.

Table 5.2 – Façade sound reduction indices

Façade Element	Indicative Construction	Estimated Sound Reduction Index (dB R _w)
External Walls	Insulated wall panel, i.e., Kingspan KS1000 AWP(60)	25 ³
Roof	Insulated roof panel, i.e., Kingspan 150mm thick RW1000	25 ⁴
Roller Shutters	Open	10
Pedestrian Doors	Timber door	30 ⁵
Glazing	Standard double glazing	30

5.3.2 External

External noise is likely to be most significantly generated by:

- Transit vans for deliveries. General engine noise from driving/idling briefly and reversing siren noise.
- Customer/staff vehicles.

Vehicles

Vehicle movements have been modelled in CadnaA as moving point sources at a height of 1.0 metre above ground level, representing the height of typical engine or tyre noise emissions during slow manoeuvring and access movements. The source noise levels applied, as shown in Table 5.3, are based on measurements taken by PJA at comparable light industrial sites under similar conditions.

3 - Page 22 from <http://kingspan.wis-studio3.wis.nl/Media/download/10954/Acoustic%20Performance%20Guide%20UK%2006-05.pdf> – Wall 1W

4 - <https://www.steelroofsheets.co.uk/products/kingspan-ks1000rw-quadcore-insulated-composite-panels/>

5 - Assumes the door has acoustic seals at the threshold/perimeter

At this stage, the number of vehicle movements has been estimated on a worst-case basis for a one-hour period, consistent with the methodology of BS 4142. Specifically, the assessment assumes:

- 1 goods vehicle movement per roller shutter door (5 in total), and
- 1 car movement per car parking space (10 spaces in total).

This approach provides a precautionary assessment of cumulative vehicle-related noise across the operational yard area during peak activity periods.

Table 5.3 – Source noise levels and operational times of external noise sources

Description	Sound Power Level L _{WA} (dB)	Number of Vehicles	Movements per vehicle over a worst-case 1-hour reference daytime period	Data Source
Small/Medium sized Goods vehicles (3 – 6t) (driving)	96	5 (1 per door)	1 movement at 10 km/h	PJA Measurements
Small/Medium sized Goods vehicles (3 – 6t) (reversing)	90	5 (1 per door)	1 movement at 5 km/h	PJA Measurements
Cars	85	10 (1 per parking spot)	1 movement at 10 km/h	PJA Measurements

5.4 Predicted Noise Emissions

The noise predictions within this report have been undertaken using the proprietary software CadnaA® by DataKustik, a 3-D noise mapping package that implements a wide range of national and international standards, guidelines and calculation algorithms, including those set out in ISO 9613-2:1996, as detailed in **Appendix D**.

Noise break-out from the building has been represented by a series of ‘area sources’ placed on each element of the façade. The sound power levels of these sources are estimated by predicting the internal noise levels (75 dB) and then accounting for the sound reduction indices of the various façade elements as outlined in **Table 5.2**. ‘Moving point sources’ following a defined line of travel have been used to model moving vehicles – based on the parameters in **Table 5.3**.

The noise model has been used to predict the resulting noise levels incident on nearby noise-sensitive receptors. ‘Receiver’ positions can be placed anywhere in the model to predict the noise emissions at any point, including directly outside the windows of residential dwellings.

Figure D.2 in **Appendix D** shows the predicted *specific noise level* L_{Aeq,1hr} during a worst-case 1-hour daytime period, accounting for all of the noise sources outlined in the previous section – predicting the specific noise level outside all facades of the nearby residential properties. As a worst-case, this is based on roller shutter doors being open. The noise contours in the figure are plotted at a height of 4.5m, with the façade receptor points showing whichever is higher from the ground floor (2m) and first floor (4.5m) levels. **Figure D.3** provides a more detailed view at the affected dwellings.

The modelling indicates a specific noise level of **28 dB** outside of the worst-affected dwelling window.

As per **Section 3.2**, a rating level penalty should be applied when assessing in accordance with BS 4142:2014:

- The noise could be classed as intermittent given the nature of noise from moving vehicles; therefore a 3 dB penalty has been applied;
- The noise is not expected to be impulsive in nature, any impulsive noise would likely occur inside the buildings and not be perceptible at the receptors;
- The noise is not likely to be readily distinctive against the residual acoustic environment, given the amount of existing industrial premises in the surrounding area.

The total penalty applied is therefore 3 dB. **Table 5.4** shows the worst-case rating level in comparison to the background sound level during the potential operational hours, which demonstrates that it is equal to the *minimum* background noise level.

Table 5.4 – BS 4142 assessment result

Period	Specific Noise Level at the worst-case facade $L_{Aeq,T}$ (dB)	Rating Level Penalties (dB)	Rating Level $L_{A,r,Tr}$ (dB)	Representative Background Sound Level L_{A90} (dB)	Difference (dB)
Operating hours 07:00 to 19:00 Monday to Friday 08:00 to 17:00 Saturday	28	+3	31	31	+/- 0 dB

5.5 Analysis

BS 4142:2014+A1:2019 implies that a rating level that does not exceed the background sound level is generally an indicator that the level of impact is acceptable.

The predicted specific noise levels are also comfortably within the required range to meet the external noise limits specified by the WHO, and would equate to compliance with the BS 8233 internal noise criteria when receptor windows are open (assuming a typical 15 dB reduction) by a comfortable margin.

These conclusions demonstrate that the proposed development should be able to operate with an acceptably low level of noise impact on local residents.

Nonetheless, PJA would suggest the implementation of a **Noise Management Plan**, to ensure that the risk of impact remains low and that any complaints are logged and dealt with accordingly, see **Section 7.0**.

6.0 Plant Noise Impact on Surrounding Properties

There is currently no mechanical plant design available for the proposed development. However, given the intended use of the units for light industrial, storage, or similar commercial activities, it is anticipated that external plant such as air source heat pumps (ASHPs), air conditioning condensers, or mechanical ventilation systems may be installed by future occupants.

In the absence of specific plant details, this assessment is based on setting appropriate rating level limits ($L_{A,r,Tr}$) for any future noise emissions from external plant, in accordance with the methodology set out in BS 4142:2014+A1:2019. These limits are derived from the existing background sound level ($L_{A90,Tr}$), with consideration for acoustic features such as tonality, impulsivity, or intermittency that may warrant the application of character corrections.

Although the proposed hours of use for the site are expected to be limited to daytime periods, both daytime and nighttime rating level limits have been set at this stage as a precaution, to allow for potential variation in future operating patterns.

It will be the responsibility of future tenants or the developer, once plant specifications are known, to demonstrate that cumulative noise emissions will comply with the limits set out in this assessment — either through appropriate acoustic design measures or by submitting a detailed BS 4142 assessment at a later stage.

6.1 Background Sound Levels

In accordance with BS 4142:2014, the predicted rating level should be assessed against a 'representative' background sound level. For a worst-case assessment, the minimum values of the background sound level $L_{A90,15mins}$ of the survey have been set as the representative background sound level - see **Table 6.1**.

Table 6.1 – Derived representative background sound level $L_{A90,T}$ at nearby residential NSRs

Noise-Sensitive Receptor (NSR)	Period	Representative Background Sound Level $L_{A90,T}$ (dB)
All nearby residential properties	Daytime (07:00 to 23:00)	30
	Nighttime (23:00 – 07:00)	

6.2 Maximum Rating Levels

It is believed that the typical local authority criteria is that the plant noise emissions should not exceed the background noise level when measured at the nearest neighbouring properties boundary / 1m outside of residential windows.

Table 6.2 – Maximum plant noise level at nearby noise-sensitive receptors

Noise-Sensitive Receptor (NSR)	Period	Maximum Plant Rating Noise Level $L_{A,r,Tr}$ (dB)
1m outside of neighbouring residential windows	Daytime (07:00 to 23:00) Tr = 60-minutes	35
	Nighttime (23:00 – 07:00) Tr = 15-minutes	31

6.3 Design Considerations

Given the separation distance to the nearest residential properties on Purcell Avenue — approximately 110 metres — and the presence of intervening commercial and industrial buildings, it is considered unlikely that typical external plant associated with this type of development would give rise to significant noise impacts, provided that appropriate acoustic design measures are followed.

At this stage, no detailed plant design has been provided. However, based on the likely types of equipment associated with a small business park development — such as air source heat pumps (ASHPs), air conditioning units, and mechanical ventilation systems — it is anticipated that the rating level limits set out in this assessment can be achieved through practical and commonly used mitigation measures.

ASHPs and condensers may need to be housed in proprietary acoustic enclosures or located within screened plant compounds to reduce noise emissions to acceptable levels. This is a typical requirement for external plant, particularly where noise-sensitive receptors are nearby.

Mechanical ventilation systems may require in-duct silencers, typically 600–1200 mm in length, on the atmospheric side of the system. These are standard components and are routinely included in modern ventilation system designs.

Where multiple plant items are proposed — such as a combination of condensers and heat pumps — the cumulative rating level must not exceed the limits set out in this report. Unit selection and spacing should be carefully considered during the detailed design stage.

The effectiveness of any mitigation will rely not only on appropriate design, but also on correct specification and installation. Acoustic measures must be implemented in accordance with manufacturer recommendations, and final plant selections must be acoustically verified against the stated noise limits — not substituted or altered without further assessment.

Consideration should also be given to long-term maintenance and access. Acoustic enclosures, attenuators, and ductwork should be designed to allow for routine servicing without compromising acoustic integrity.

None of the above measures are considered unusual or onerous for a development of this type. It is expected that a planning condition will be applied requiring a detailed BS 4142 assessment once the final plant specification is known, to confirm that cumulative emissions remain within the limits established in this report.

7.0 Noise Management Plan

This Noise Management Plan (NMP) outlines measures to minimise and control noise emissions associated with the operation of the 5 new business units at Sandfields Young Business Centre.

The purpose of the plan is to ensure that operational noise remains consistent with the assumptions and predictions presented in the accompanying Noise Impact Assessment, to safeguard the amenity of nearby residential receptors. It also aims to provide a clear framework of operational controls to reduce and manage any potential noise impacts during the site's daily use.

7.1 Operational Controls

The following measures will be implemented to manage noise effectively:

Operating Hours

- The proposed operating hours will be strictly adhered to:
 - Monday to Friday: 07:00 – 19:00
 - Saturdays: 08:00 – 17:00
- A clear schedule of permitted activities will be provided to all employees and contractors to prevent unauthorized work outside these hours.

Building Access

- Industrial unit doors will remain closed as much as possible during operations that generate high noise levels.
- Automatic door-closing mechanisms will be considered to ensure compliance.
- Occupants must ensure that doors are not left open unnecessarily when vehicles are stationary or during high-noise operations such as grinding, cutting, or machining.

Loading and Unloading Activities

- All loading and unloading will take place inside the industrial units wherever feasible.
- When external loading or unloading is unavoidable, vehicles must reverse as close to the building doors as possible to minimize external noise propagation.
- Drivers will be instructed to carry out operations quietly, avoiding unnecessary noise, such as slamming doors or dropping loads.

Vehicle and Equipment Restrictions

- Goods vehicles will be equipped with broadband (white noise) reversing alarms where possible to replace tonal beeping alarms.
- Site vehicles, including goods vehicles, will avoid idling unnecessarily, especially in proximity to residential or sensitive boundaries.
- Drivers will be trained to perform slow, controlled movements to minimize noise during vehicle operation.

Material Handling

- Rubber matting will be used for high-impact activities such as loading/unloading or dropping loose materials to reduce impact noise.
- Materials, including pallets, will not be dropped outside buildings. Where handling involves skips or bins, the internal surfaces of these will be lined with rubber to absorb impact noise.

Use of Plant and Equipment

- Plant and equipment will be inspected regularly to ensure components such as bearings, belts, and moving parts are lubricated and in good condition to prevent excessive noise from wear and tear.
- Any noisy equipment identified during maintenance will be repaired or replaced promptly.

High-Impact Activities

- Activities generating high-impact or intermittent noise (e.g., hammering, grinding) will be scheduled for mid-morning or mid-afternoon, avoiding early or late operational periods when noise sensitivity may be higher.
- Outdoor high-impact activities will be prohibited.

Staff Conduct and Behaviour

- Staff will be instructed to avoid shouting or creating unnecessary noise during operations, especially during early morning and late evening periods.
- Use of radios, alarms, or other noise-generating equipment will be controlled so that volumes do not contribute significantly to the noise environment.
- Staff will be made aware of the importance of maintaining quiet working practices, especially during loading/unloading operations and outdoor activities.

7.2 Staff Training and Awareness

To ensure effective noise management, all staff and contractors operating on-site will receive comprehensive training in noise mitigation practices. This will include:

Induction Training

- All new staff and contractors will undergo an induction program that includes an overview of the Noise Management Plan. This will highlight the importance of adhering to operational controls, such as keeping doors closed, using designated loading areas, and maintaining equipment to minimize noise.

Periodic Refresher Training

- Regular training sessions will be conducted to reinforce key noise management practices and introduce updates to procedures. This will ensure all staff are kept informed of their responsibilities as site activities evolve.

Practical Guidance

- Staff will receive hands-on training in the use of noise-reducing practices, such as properly handling materials (e.g., using rubber mats for high-impact activities), minimizing unnecessary noise during vehicle operation, and maintaining a quiet workspace.

Awareness of Noise Impacts

- Training will emphasize the potential impact of noise on nearby residents, businesses, and the local environment. This will foster a culture of accountability and encourage proactive efforts to minimize unnecessary noise.

Hearing Protection Awareness

- Staff will be educated on the potential effects of noise on their hearing and the importance of using appropriate hearing protection where necessary. This will include guidance on identifying high-noise scenarios and how to mitigate personal exposure.

Monitoring and Feedback

- Supervisors will monitor staff compliance with noise management practices during daily operations. Constructive feedback will be provided to address any lapses in adherence.

7.3 Complaint Management

A robust complaint management system will be established to address any noise-related concerns raised by nearby receptors. The process will include:

Designated Contact Point

- A site manager will act as the primary point of contact for receiving noise complaints. Contact details (e.g., phone number and email address) will be made readily available to local residents and businesses through signage or community notifications.

Complaint Response Procedure

- Complaints will be acknowledged within 24 hours, with an initial assessment conducted to determine the cause of the noise issue.
- A detailed investigation will follow, to be completed within five working days. This will include reviewing noise monitoring data, operational logs, and staff feedback to identify the source and cause of the issue.
- Corrective measures, such as adjustments to operations, additional mitigation, or staff retraining, will be implemented promptly to resolve the issue.

Complaint Log

- A detailed log will be maintained to document all complaints, including:
 - Date and time of the complaint.
 - Nature of the complaint (e.g., excessive goods vehicle noise, high-impact activity).
 - Investigative actions taken.
 - Mitigation measures implemented.
 - Outcome and follow-up communication with the complainant.
- The log will be reviewed periodically to identify recurring issues and implement long-term solutions.

Community Communication

- Complainants will be informed of the findings of the investigation and the actions taken to address their concerns.
- If necessary, meetings or briefings will be held with local stakeholders to maintain transparency and build trust.

Proactive Measures

- Regular reviews of complaints will be conducted to identify patterns or operational factors contributing to noise issues. This will help anticipate and prevent future complaints through targeted adjustments to operations or mitigation practices.

Complaints Management/Community Liaison

The applicant should provide a telephone number and email address to local residents so that any issues can be reported.

Complaints records should be kept and should as a minimum contain the following:

- date, time, and the name of the complainant (if given);
- nature of the complaint;
- the locality of complaint; and
- a summary of the investigation into the noise complaint, the actions that were taken and the outcome.

The response to the complaint will have the objective of investigating the incident and preventing any continuing issue by putting in place additional control or management measures to prevent the re-occurrence of the incident.

The investigation into the complaint will include but not be limited to:

- a visit by the site operator or phone call/email correspondence with the complainant to verify the issue, including whether the complaint is made 'after' rather than 'during' a noise event;
- a review of activities at the time of the incident to investigate potential sources; and
- a review of noise control measures and management actions at the time of the incident;

The investigation will be accompanied by a written record detailing any failures, incidents and what mitigation was (at the time) employed or will be used in future.

The Operator shall keep records of all investigations, and complaints and these shall be made available to the EHO to examine on request.

Appendix A – Acoustic Terminology and Concepts

A.1 – Glossary

Table A.1 – Glossary of acoustic terminology

Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio of the root-mean-square pressure of the sound and a reference pressure (2×10^{-5} Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Frequency	Sound can occur over a range of frequencies extending from the very low, such as the rumble of thunder, up to the very high such as the crash of cymbals. Sound is generally described over the frequency range from 63Hz to 4000Hz (4kHz). This is roughly equal to the range of frequencies on a piano.
$L_{Aeq,T}$	L_{Aeq} is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period. This parameter is typically considered as a good representation of the 'average' overall noise level. It is referred to technically as the A-weighted equivalent continuous sound level and is a dB(A) as defined above.
$L_{A90,T}$	The A-weighted noise level that is exceeded for 90% of the measurement period T. This parameter is often considered as the 'average minimum level'.
$L_{A10,T}$	The A-weighted noise level that is exceeded for 10% of the measurement period T. This parameter is often considered as the 'average maximum level';
$L_{AFmax,T}$	The maximum A-weighted noise level during the measurement period T.

A.2 – Subjective Changes in Noise Level

Table A.2 – Subjective loudness from an increase or decrease in sound pressure level

Change in sound pressure level	Relative change in sound power energy (multiplier)		Change in apparent subjective loudness (for mid-frequency range)
	Decrease	Increase	
3 dB	1/2	2	'Just perceptible'
5 dB	1/3	3	'Clearly noticeable'
10 dB	1/10	10	'Half or twice as loud'
20 dB	1/100	100	'Much quieter, or louder'

Appendix B - BS 4142:2014

BS 4142:2014 *'Methods for rating and assessing industrial and commercial sound'* is intended to be used to assess the potential adverse impact of sound of an industrial and/or commercial nature, at nearby noise-sensitive receptor (NSR) locations within the context of the existing sound environment.

B.1 - Definitions

BS 4142:2014 provides the following definitions which are relevant at this pre-construction stage of assessment:

- **Background Sound Level, $L_{A90,T}$:** A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given interval, T , measured using time weighting F and quoted to the nearest whole number of decibels.
- **Rating Level, L_{A,r,T_r} :** Specific sound level plus any adjustment for the characteristic features of the sound.
- **Reference Time Interval, T_r :** Specified interval over which the specific sound level is determined. This is 60-minutes during the day (07:00 – 23:00) and 15-minutes at night (23:00 – 07:00).
- **Specific Sound Level, $L_s = L_{Aeq,T_r}$:** Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .
- **Specific Sound Source:** Sound source being assessed.

The BS 4142:2014 definition of sound of an industrial and/or commercial nature includes *"sound from fixed installations which comprise mechanical and electrical plant and equipment"*. The scope of BS 4142:2014 is not intended for sound from the passage of vehicles on public roads; people; and 'other sources falling within the scopes of other standards or guidance'.

B.2 - Specific Sound Level

The specific sound level L_s is the equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r , of 60-minutes during the day (07:00 – 23:00) and 15-minutes at night (23:00 – 07:00).

B.3 - Rating Level

The rating level L_{A,r,T_r} is the specific sound level L_s plus any 'penalties' which account for the characteristic features of the sound.

BS 4142:2014 provides the following with respect to the application of penalties to account for *"the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention"*.

- **Tonality** – For sound ranging from not tonal to predominantly tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a penalty of 2 dB

for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible and 6 dB where it is highly perceptible;

- **Impulsivity** – A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible;
- **Intermittency** – When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied; and
- **Other Sound Characteristics** – Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied."

PJA consider the word 'perceptible' to be important, and variable depending on the context of a site. For example at a site with a relatively high background sound level of 50 dB(A), an 'impulsive' sound source with a specific sound level of 30 dB(A) at an NSR is unlikely to be perceptible and should probably not be penalised.

However, the same source at a site with a lower background level of 30 dB(A) would be perceptible, and therefore a penalty of 3 or 6 dB could be applied to the rating level, with possibly a 9 dB penalty being applied if the specific sound level were to rise from 30 to 40 dB(A). Therefore the context is important in applying rating level penalties.

B.4 - Background Sound Level

BS 4142:2014 states that *"in using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods."*

BS 4142:2014 further states that *"a representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either minimum or modal value"*. Hence BS 4142:2014 does not provide a 'black and white' method of obtaining the assessment level for background sound $L_{A90,T}$.

B.5 - Assessment of Adverse Impact

The assessment of adverse impact contained in BS 4142:2014 is undertaken by comparing the rating level $L_{A,r,T,r}$ to the measured representative background sound level $L_{A90,T}$ outside the sensitive receptor location.

The significance of the impact of an industrial or commercial sound source depends on both the margin by which the rating level $L_{A,r,T,r}$ exceeds the background sound level $L_{A90,T}$ and the context in which the sound occurs. It is therefore essential to place the sound in context. But in general *"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."*

Appendix C – Noise Survey Details

C.1 – Survey Equipment

The monitoring equipment used for the baseline noise survey is detailed in the table below. The sound level meter was calibrated before and after the survey, with no significant drifts of greater than 0.5 dB observed. The sound level meter had been calibrated to a traceable standard within the 24 months preceding the survey, and the calibrator had been calibrated to a traceable standard within the 12 months preceding the survey. The equipment complies with the standards of a BS EN 60942:2003 Class 1 device.

Table C.1 – Equipment used for the noise survey

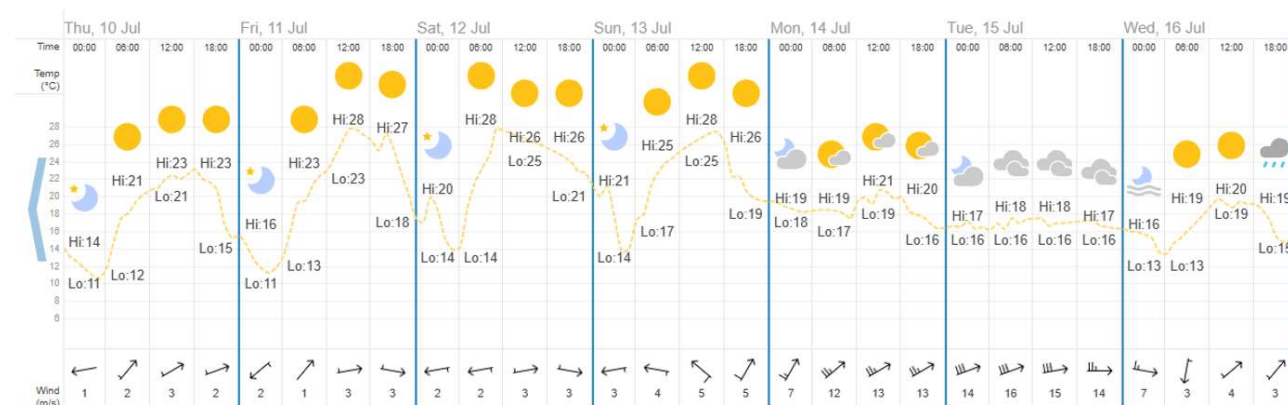
Name	Serial Number	Last Calibrated	Calibration Due
SVAN 949 Class 1 Sound Level Meter	9720	Jan-24	Jan-26
SV22 Class 1 Microphone	4012386	Jan-24	Jan-26
Casella CEL 120-1 Class 1 Calibrator	2651640	Feb-25	Feb-26

C.2 – Meteorological Conditions

During the survey, weather conditions were mostly dry and mild, with wind speeds generally under 5 m/s. The microphone was fitted with a weather protection kit/windshield. The weather conditions are considered to be in accordance with BS 7445 Description and Measurement of Environmental Noise. Weather data has been sourced from: <https://www.timeanddate.com/weather/@3333245/historic>.

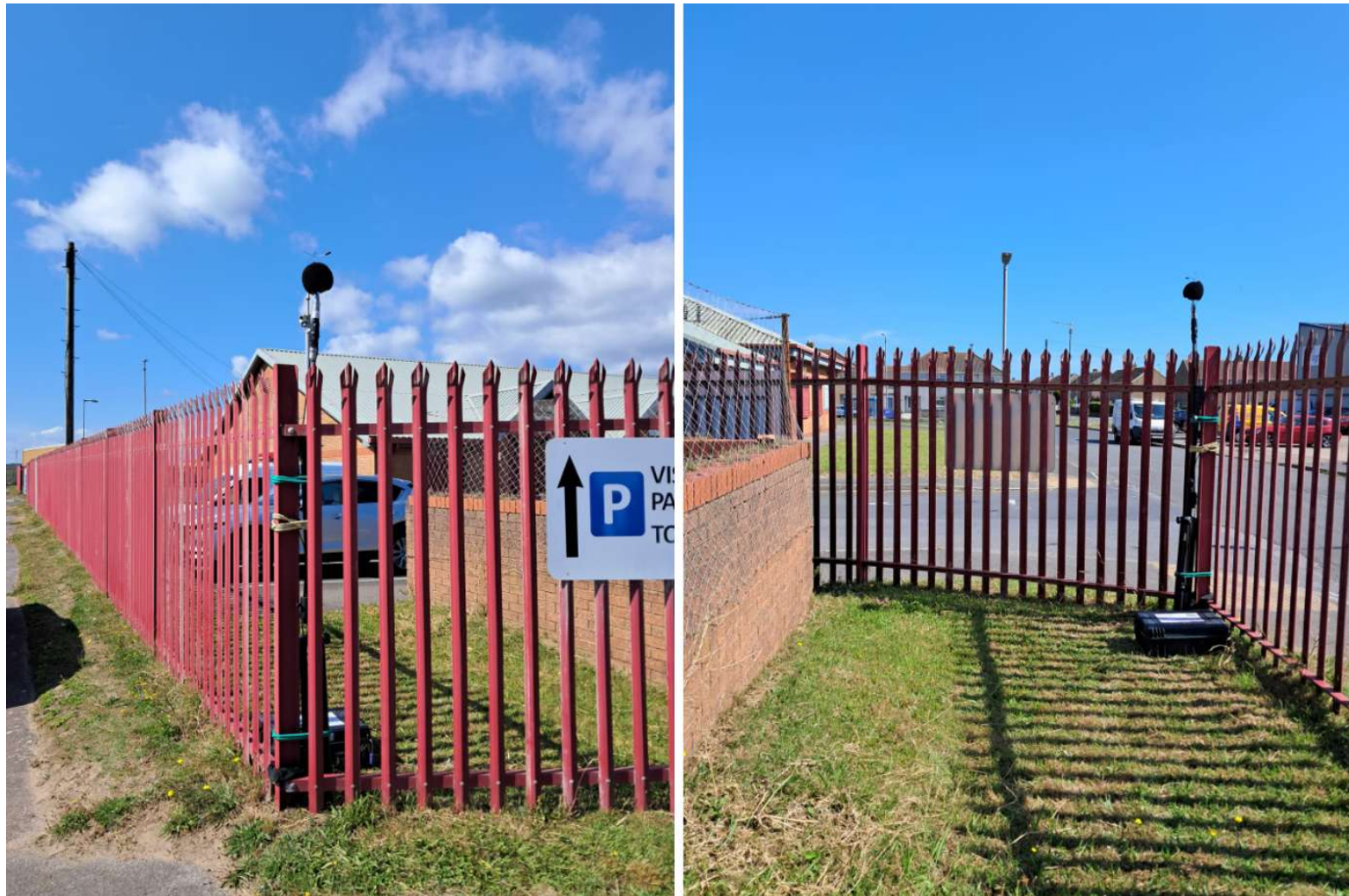
There were periods on Monday 14th and Tuesday 15th where higher wind speeds were evident. However, the overall length of the survey allowed for sufficient data to be captured during suitable conditions. Furthermore, the use of minimum background sound levels (rather than modal, mean, or median values) helped to exclude these windier periods where noise levels may have been elevated.

Figure C.1 – Meteorological conditions during the survey



C.3 – Photographs

Figure C.2 – Photographs of the noise monitoring position



Appendix D – Calculations

The noise predictions within this report have been undertaken using the proprietary software CadnaA® by DataKustik, a 3-D noise mapping package that implements a wide range of national and international standards, guidelines and calculation algorithms, including those set out in ISO 9613-2:1996.

All of the objects within the model (buildings, roads, barriers, foliage, etc) have been imported from OpenStreetMap or drawn in manually where the OSM did not contain sufficient data. The heights of the buildings and roads have been based upon Google Earth Pro, using the 3D view to be able to measure the elevation heights at the tops of objects, and then inserting this manually into the model. Lastly, the scaled site plan, floor plan, and elevation for the proposed development have been accounted for in the model.

The noise model has assumed:

- a ground absorption factor of:
 - 0 in the site and industrial estate, in the curtilage of residential properties, and on roads; and
 - 1 in greenfield land.
- a maximum reflection factor of two where buildings and barriers are assumed to have a 'smooth' reflective façade, as a worst-case;
- receptor heights on the façade of residential receptors at ground floor height (2m) and 1st floor heights (4.5m);
- the noise contour map plotted at a height of 4.5m (1st floor window height);
- atmospheric sound absorption based upon a temperature of 10°C and a humidity level of 70%, as per Table 2 of ISO 9613-2:1996.

The noise model has been used to predict the resulting $L_{Aeq,1hr}$ specific noise levels from a worst-case 1-hour period during the proposed daytime operational hours – outside of the facades of nearby residential buildings.

The images on the following pages contain screenshots from the mapping.

Figure D.1 – 3D views of the noise model setup

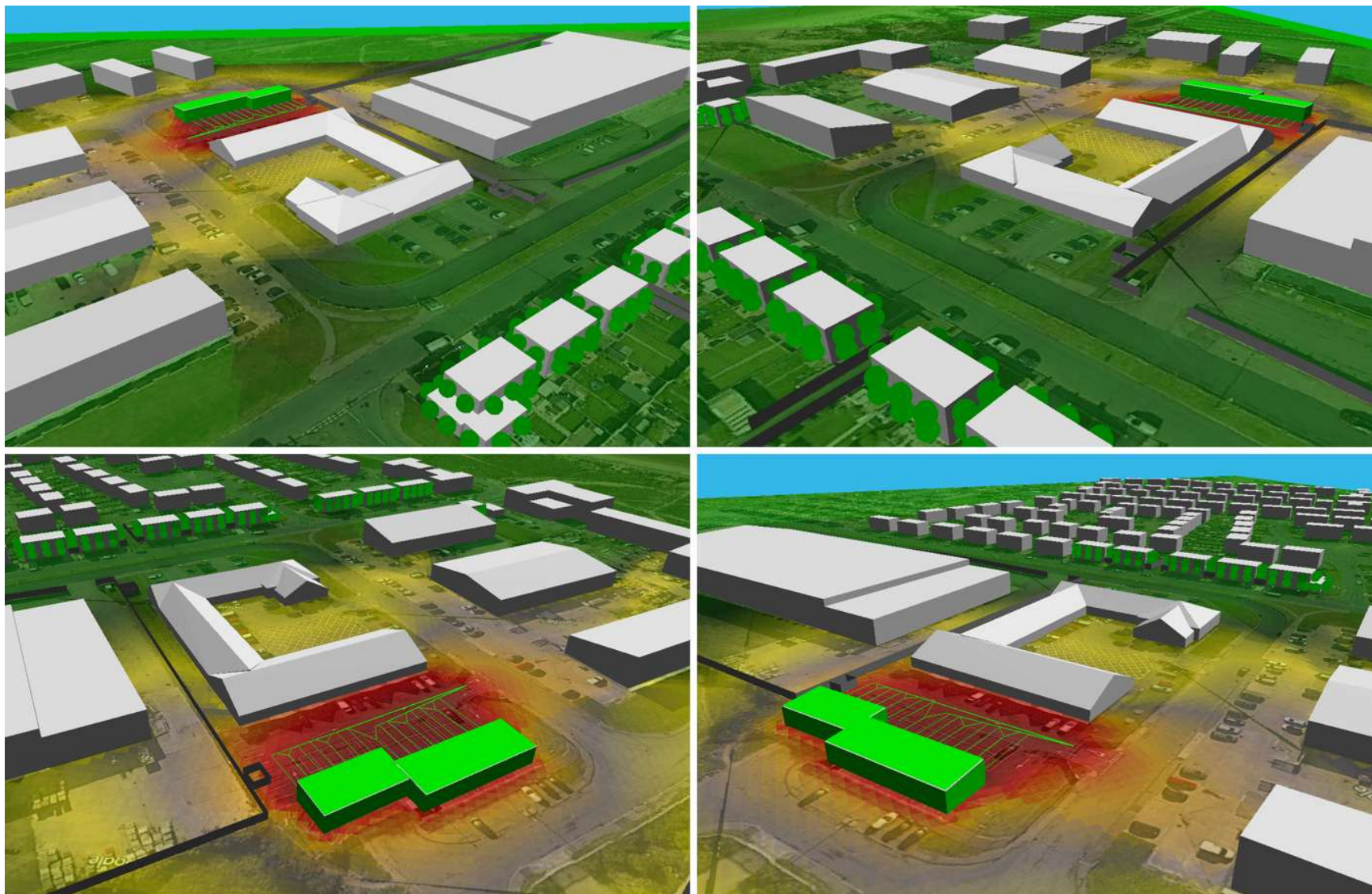


Figure D.2 – Predicted specific noise levels (dB LAeq,1hr)

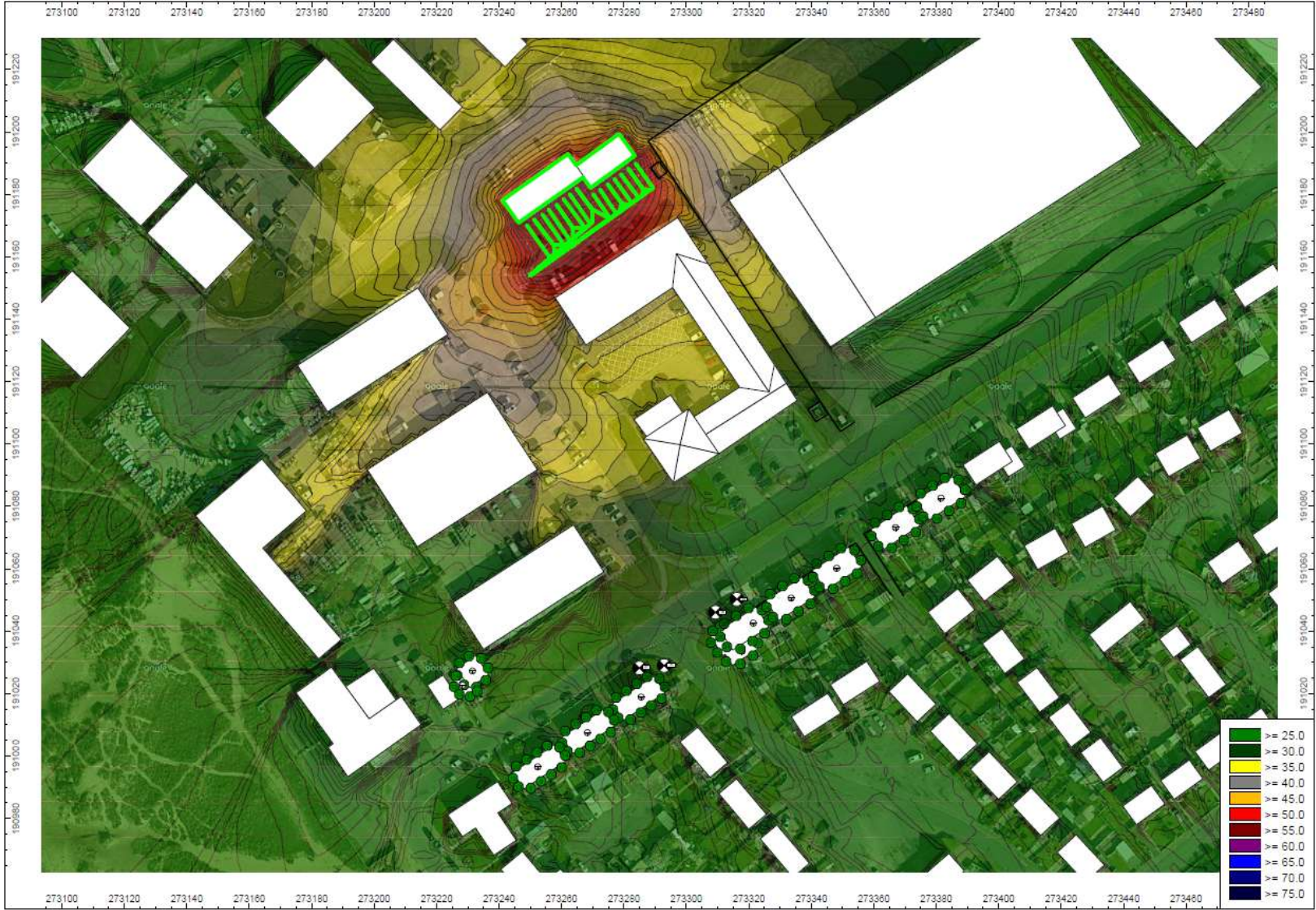
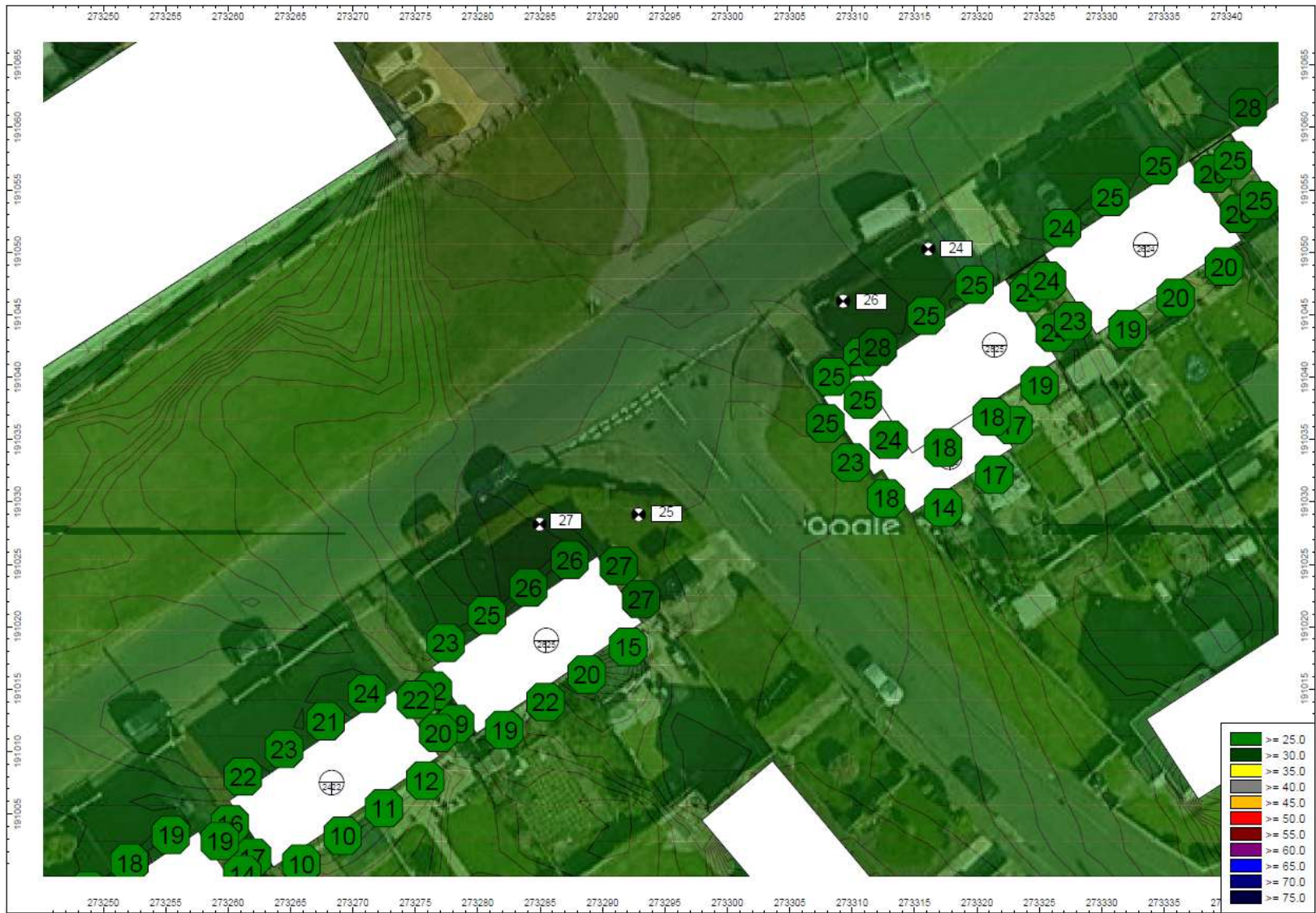


Figure D.3 – Predicted specific noise levels (dB L_{Aeq,1hr}) – Detail of receptors





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