



## Noise Management Plan

Bryan Bransom  
(Trading as BB Contracting Ltd)  
Brands Farm Recycling Facility  
off Brands Lane  
Felthorpe  
Norwich  
NR10 4EA



PROVIDING SOLUTIONS, ENSURING COMPLIANCE

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### Document Control Table

Project Reference	21/001h
Project Title	Noise Management Plan
Document Title	Noise Management Plan
Document Issue Date	05 January 2026
Client	Bryan Bransom (Trading as BB Contracting Ltd)
Status	Issued

### Change log

Version	Changes	Produced by	Checked by	Date
1	Original Noise Management Plan	Sian Wilcox	Tracey Westbury	06 November 2025
2	Update to operator's name in 1.1.	Sian Wilcox	Tracey Westbury	05 January 2026



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Appendix 1 Noise Impact Assessment

Appendix 2 Inspection Checklist

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## 1. Introduction

- 1.1. Westbury Environmental Limited has prepared this Noise Management Plan (NMP) on behalf of Bryan Bransom – Trading as BB Contracting Limited (Operator) at Brands Farm Recycling Facility, off Brands Lane, Felthorpe, Norwich, NR10 4EA (Site).
- 1.2. The waste facility at Brands Farm Recycling Facility operates under Environmental Permit Ref. EPR/WE1623AB. The area covered by this permit is defined as the site (Site) within this report.
- 1.3. The following waste operations are carried out on the Site;
  - construction / demolition and excavation waste transfer station,
  - production of soil, soil substitutes and aggregates.
- 1.4. The Site extends to an area of approximately 0.75ha. The location and extent of the Site is shown in Drawing No. 21/001c 002 Site Layout Plan.
- 1.5. This NMP provides detailed information on the sources, risk and mitigation measures related to noise emissions from the operations to be undertaken on Site.
- 1.6. This NMP has been prepared in accordance with:
  - The Environment Agency guidance on Noise Management Plans: Environmental Permits, last updated 31 January 2022 (NMP Guidance).
  - JRC Science for Policy Report: Best available techniques (BAT) reference document for waste treatment, October 2018 (BREF).
  - Non-hazardous and inert waste: appropriate measures for permitted facilities, updated August 2023 (Appropriate Measures).
- 1.7. If noise is audible at any of the following types of locations, the environmental regulators will regard it as 'possibly causing an impact':
  - Residential properties.
  - Commercial properties.
  - Schools.
  - Hospitals.
  - Offices.
  - Public recreation areas.
  - Other Noise Sensitive Receptors (NSR).
  - Noise sensitive habitats.
- 1.8. Where noise is possibly causing an impact, the operator must carry out an assessment to determine:
  - The level of impact.
  - How much work needs to be done to prevent or minimise noise pollution.
- 1.9. Operators must prevent significant pollution and comply with the requirements to use 'appropriate measures' (Waste Framework Directive 2018/851) or 'best available techniques' (BAT) to prevent or minimise noise pollution.

### **Noise Impact Assessment**

- 1.10. A Noise Impact Assessment (NIA) has been completed to fully assess the impact of the waste activities in relation to noise, see Appendix 1 Noise Impact Assessment.
- 1.11. The requirements of both the NMP and the NIA will be implemented by the Noise Procedure that is included in the Environmental Management System (EMS).
- 1.12. There are three possible outcomes from an NIA:
  - Unacceptable level of audible or detectable noise.
    - This level of noise means that significant pollution is being, or is likely to be, caused at a receptor (regardless of whether the Operator is taking appropriate measures).



- The Operator must take further action, or you may have to reduce or stop operations. The environment agencies will not issue a permit if the Operator is likely to be operating at this level.
- The closest corresponding BS4142 descriptor is 'significant adverse impact' (following consideration of the context).
- Audible or detectable noise.
  - This level of noise means that a noise pollution is being (or is likely to be) caused at a receptor.
  - The Operators duty is to use appropriate measures to prevent or, where it is not practicable, minimise noise. You are not in breach if you are using appropriate measures, but the Operator will need to rigorously demonstrate that they are using appropriate measures.
  - The closest corresponding BS4142 descriptor is 'adverse impact' (following consideration of the context).
- No noise, or barely audible or detectable noise.
  - This level of noise means that no action is needed beyond basic appropriate measures or BAT.
  - The closest corresponding BS4142 descriptor is 'low impact or no impact' (following consideration of context).
  - Low impact does not mean there is no pollution. However, if you have correctly assessed it as low impact under BS4142 the environment agencies may decide that taking action to minimise noise is a low priority.

1.13. The NIA for Brands Farm Recycling Facility concludes that:

- An assessment of the waste activities against the appropriate EA guidance for waste operations indicated that, with appropriate noise mitigation and control measures, noise levels at the neighbouring properties would be acceptable.
- The BS 4142 assessment undertaken, based upon the EA guidance indicated that, with appropriate management controls implemented, the operations would generally result in a low impact / no impact.

1.14. The noise impact identified in the NIA means that a Noise Management Plan is required to be developed. Therefore, justification of the necessity for this Noise Management Plan document.

### **Responsibilities**

1.15. The Site Manager is responsible for the general management of the Site. In relation to this NMP the Site Manager will undertake the following responsibilities:

- Implement the requirements of the NMP and ensure that mitigation measures are adhered to.
- Investigate complaints.
- Temporarily cease activities in the event of significant complaints / abnormal noise emissions.
- Review / organise the review of the NMP to ensure continuing effectiveness of meeting the requirements in the Best Available Techniques (BAT) guidance and Appropriate Measures Guidance.
- Delegate duties to suitably trained personnel.
- Deliver or organise the necessary training for site Operatives with regard to noise mitigation measures.
- Ensure all plant and equipment is maintained to minimise noise emissions.

1.16. The Site Manager will ensure all operational staff are familiar with the requirements of the NMP.

1.17. All Site staff are responsible for:

- Detecting and reporting significant noise emissions from waste activities to the Site Manager as soon as possible.
- Carrying out routine checks, see Appendix 2 Inspection Checklist.



### **Training**

- 1.18. The Noise Procedure in the EMS requires staff to be trained on the details included within this Noise Management Plan, including noise mitigation measures and any monitoring of noise.
- 1.19. It is the responsibility of the Site Manager to arrange and execute any staff training. A record of this training will be maintained on each staff members Training Record. Copies of the staff Training Records are kept in a secure location on Site.
- 1.20. Should any noise complaint investigations conclude that a noise emission arose as a result of the NMP not being followed by Site staff, further training will be completed on the implementation of the requirements of the Noise Procedure within the EMS.

### **Review**

- 1.21. The NMP will be reviewed annually or in the event of the following:
  - If the operator receives persistent noise complaints, see Section 6 Complaints Reporting.
  - When a change in operations is deemed to have a potential effect on increasing noise emissions.
  - If a failure in the existing mitigation measures has been identified.

### **Content of the Noise Management Plan**

- 1.22. This Noise Management Plan will form part of the Environmental Management System (EMS) for the Site. Procedures and Forms referenced within this Noise Management Plan will be included within the EMS. Completed forms (records) will be kept, as required by conditions included in the Environmental Permit.
- 1.23. This Noise Management Plan is structured as follows:
  - Section 2 provides information relating to the Site setting and waste activities.
  - Section 3 provides information relating to noise sensitive receptors.
  - Section 4 provides a summary of noise sources on and around site.
  - Section 5 provides information on the site management and the mitigation measures employed at the Site to minimise noise.
  - Section 6 provides a description of how complaints can be made and how they are addressed by the site management.



## 2. Site Description

### Site Location

- 2.1. The Site is located at off Brands Lane, Felthorpe, NR10 4EA.
- 2.2. The Site is located approximately 10km to the Northwest of Norwich. The centre of the Site is located at National Grid Reference TG 16830 16434.
- 2.3. The Site extends to approximately 0.75ha, see Drawing No. 21/001c 002 Site Layout Plan.
- 2.4. The Site is largely surrounded by the following land types/uses:
  - Woodland.
  - Agricultural.
  - Residential.

### Waste Operations and Activities

- 2.5. The operations undertaken at the Site include construction / demolition and excavation waste transfer station, and production of soil, soil substitutes and aggregates.
- 2.6. Waste activities include:
  - Screening.
  - Crushing.
  - Mechanical sorting.
- 2.7. The following plant and equipment are used on Site associated with the waste operations:
  - Screening plant.
  - Crushing plant.
  - Front shovel loader.
  - HGV's.
  - Teleporter.
- 2.8. All plant and equipment used on the Site will be subject to maintenance checks in accordance with the Maintenance Procedures within the EMS.
- 2.9. All plant and equipment will be operated in accordance with industry good practice, for example, operation of a no-idling policy, no over revving of engines etc.
- 2.10. The Operator will implement a policy of replacing older machinery with new, lower emission machinery as it becomes available and as the business development allows.

### Operating Hours

- 2.11. The opening hours for the Site are:
  - 07:30 - 17:30 hrs Monday to Friday
  - 08:00 - 16:00 hrs Saturday
- 2.12. The operational hours for the Site are:
  - 07:30 - 17:30 hrs Monday to Friday
  - None



### 3. Sensitive Receptors

#### Pathway

- 3.1. Wind direction plays a significant role in the potential impact experienced from noise. Noise will be 'carried' by the wind. It is therefore considered that noise is more likely to travel towards sensitive receptors that are 'down-wind' of the Site.
- 3.2. The distance from the Site boundary to the closest boundary of the sensitive receptor plays an important role in the potential impact experienced from noise. Noise at sensitive receptors will reduce with distance from the source. Noise has the potential to cause a nuisance where sensitive receptors are closer to the Site.
- 3.3. Wind speed and direction data have been obtained from the Norwich weather station for the period from 11/2000 - 07/2025, see Figure 3.1. Norwich weather station is located approximately 6.5km Southeast of the Site. This observing station has wind speed and direction data appropriate for characterisation of the wind climate at Site.
- 3.4. The predominant wind direction at the Site blows is towards the Northeast.

**Figure 3.1 Wind Rose from Norwich Weather Station.**



#### Sensitive Receptors

- 3.5. Waste activities carried out on the Site have the potential to cause noise emissions. Noise emissions can create a potential nuisance in the community (residents and employees of nearby businesses) or can have an impact on local wildlife.
- 3.6. This NMP identifies receptors that may be sensitive to noise emissions.
- 3.7. Sensitive receptors to the Northeast are considered most at risk from noise emissions due to the predominant wind direction blowing towards the Northeast.
- 3.8. The direction and distances from the permit boundary to the closest boundary of sensitive receptors, within 1000m of the Site, are provided in Table 3.1.

**Table 3.1 Noise Sensitive Receptors within 1km of the Site Boundary**

Receptor	Description	Direction from site boundary	Distance from site boundary (m)
Deciduous woodland and Local Wildlife Site	Protected Habitat	East	0m
Housing on Brands Lane	Residential	West	110m



Housing on Brands Lane	Residential	Northwest	120m
Housing on Brands Lane	Residential	Northwest	245m
Pet Groomer	Commercial	South	250m
Hiking Area	Amenity	Southeast	494m
Commercial Units	Commercial	Southwest	680m
Commercial Units	Commercial	Southwest	705m
Felthorpe Airfield	Commercial	Northwest	755m
Housing on Fir Covert Road	Residential	West	790m
St Margarets of Antioch	Place of worship	Northeast	815m
Thorpe Mariott	Residential	Southeast	880m
Horsford Dog Lane Plantation Park	Amenity	Southeast	888m
Church Farm	Agricultural	Northeast	1000m

- 3.9. The location of the noise sensitive receptors listed in Table 3.1 are shown in drawing Sensitive Receptors, Drawing No. 21/001e 001.
- 3.10. There is a protected habitat located immediately east of the Site that consists of Deciduous Woodland and a Local Wildlife Site.
- 3.11. The nearest residential receptor is housing on Brands Lane, located 110m West of the Site. It is considered that this receptor will be screened from potential noise emissions due to the fact that it is separated from the Site the buildings and infrastructure of neighbouring businesses.
- 3.12. Other nearby residential receptors located to the Northwest are also separated from Site by the buildings and infrastructure of neighbouring businesses.



## 4. Noise Sources and Processes

### Contextual Information

- 4.1. The Site is largely surrounded by the following land types/uses:
- Woodland.
  - Agricultural.
  - Residential.
- 4.2. There is agricultural land located to the north, woodland located to the east, agricultural land located to the south and commercial activities located to the west.

### Noise Sources

- 4.3. The activities with the potential to cause noise emissions from the Site are:
- Crushing plant.
  - Screening plant.
  - Front shovel loader.
  - HGV's.
  - Teleporter.

### Other Sources of Noise

- 4.4. Other potential sources of noise at the location of the Site include:
- Vehicles on nearby roads such as Brands Lane, Reepham Road and the A1270 Broadland Northway.
  - Industrial activities in the wider Brands Farm area.
  - Agricultural activities (seasonally).
  - Aircraft landing at Felthorpe Airfield.
- 4.5. It is considered that activities on the surrounding land could also be a source of noise at various times throughout the year.

### Noise Impact Assessment Conclusion

- 4.6. The Noise Impact Assessment concludes that there will be a low impact / no impact at the Protected Habitat sensitive receptor, located 0m to the East of the Site.
- 4.7. The following contextual points have been considered in the Noise Impact Assessment:
- The site only operates during the weekdays, with no operation at all at the weekend.
  - The site only operates in the daytime hours and finishes operation early in the afternoon, meaning the site is not operational during the more critical evening periods.
- 4.8. The details of the sound power levels from each noise source identified is included in the NIA, see Appendix 1 Noise Impact Assessment. The following noise sources were identified as being dominant at nearby receptors:
- Crushing plant.
  - Screening plant.

### Noise Processes and Emissions

- 4.9. The layout of the Site, including location of buildings, structures, processes and equipment that could impact the noise emissions from the Site are described below:
- Corrugated roofed covered area.
  - Designated waste storage area along the western boundary of the Site.
  - Designated waste treatment area along the eastern boundary of the Site.
  - Bunded and treed boundary.
  - Corrugated roofed covered area.



- 4.10. Crushing is considered that the noisiest activity carried out on the Site. This activity takes place in the designated waste treatment area along the eastern boundary of the Site.
- 4.11. The above information is included on the Site Layout Plan, see Site Layout Plan Drawing No. 21/001c 002.



## **5. Control Measures and Process Monitoring**

5.1. Table 5.1 provides details of mitigation measures that will be employed at the Site.



Table 5.1 Control Measures

Potential noise source	Proposed Operational times	Contribution to overall impact	Control measures (Appropriate Measures/BAT)	Contribution to overall impact post control measures	Action taken following a noise complaint
Vehicle movements within the Site	07:30 - 17:30 Monday to Friday 08:00 - 16:00 Saturdays	High	<p>Drivers of mobile plant will be instructed to avoid leaving engines running unnecessarily or excessive revving of engines.</p> <p>Non-intrusive broadband noise type reverse alarms to be used. Pulsed and/or tonal reversing alarms will not be permitted on Site.</p> <p>Minimise drop heights for materials at all times.</p> <p>Maintenance of plant in accordance with manufacturer guidelines.</p> <p>The speed limit for all vehicles on Site is 5mph.</p> <p>The Site surface will be maintained to ensure the surface is kept free from potholes and ruts where possible.</p> <p>Only trained and competent staff will operate the machinery.</p>	Medium	<p>Investigate complaint.</p> <p>Check that waste operations are being carried out in accordance with the Noise Procedure within the EMS.</p> <p>Provide additional staff training should it be required.</p> <p>Plant and equipment will be checked for faults that could lead to increased noise. Repairs/maintenance carried out as necessary</p> <p>Temporary cessation of activities that are identified to be a source of nuisance noise emissions.</p>
Material	07:30 - 17:30	Medium	The speed limit for all vehicles	Low	Investigate complaint.



<p>handling / movement / tipping off/ loading</p>	<p>Monday to Friday 08:00 - 16:00 Saturdays</p>		<p>on Site is 5mph. Speed humps will not be used on Site.</p> <p>No unnecessary double-handling of material.</p> <p>Drop heights will be minimised, which will reduce noise.</p> <p>Material will be deposited where it is needed to avoid double handling.</p>		<p>Check that operations are being carried out in accordance with the Noise Procedure within the EMS. Provide additional staff training should it be required.</p>
<p>HGV Movements in and out of the Site. Imports and exports</p>	<p>07:30 - 17:30 Monday to Friday 08:00 - 16:00 Saturdays</p>	<p>Medium</p>	<p>The speed limit for all vehicles on Site is 5mph. Speed humps will not be used on Site.</p> <p>The Site surface will be maintained to ensure the surface is kept free from potholes and ruts as much as possible.</p> <p>All vehicles must only use non-intrusive broadband noise type reversing alarms. Pulsed and/or tonal reversing alarms will not be permitted on Site.</p> <p>Where HGVs are sub-contractor vehicles they will be encouraged to use this type of non-tonal alarm.</p> <p>Drivers of HGVs will be instructed to avoid leaving engines running unnecessarily or excessive revving of</p>	<p>Low</p>	<p>Investigate complaint.</p> <p>Vehicles will be checked for faults that could lead to increased noise. Repairs/maintenance carried out if necessary.</p> <p>Check that operations are being carried out in accordance with the Noise Procedure within the EMS.</p> <p>Provide additional staff training should it be required.</p>



			engines. Deliveries will not take place outside of operational hours.		
Crushing plant	07:30 - 17:30 Monday to Friday 08:00 - 16:00 Saturdays	High	Only trained and competent staff will operate the machinery.  Machinery will be maintained in line with manufacturer guidance.  Waste processing will not take place outside of operational hours.  The area assigned for waste processing is positioned to maximise the distance from nearby sensitive receptors where possible.	Medium	Investigate complaint.  Complete complaint form within the EMS and investigate the complaint.  Check that operations are being carried out in accordance with the Noise Procedure within the EMS.  Provide additional staff training should it be required. Plant and equipment will be checked for faults that could lead to increased noise.  Repairs/maintenance carried out if necessary.  Temporary cessation of activities that are identified to be a source of noise emissions if relevant.
Screening plant					
Front shovel loader					
HGV's					
Teleporter					



## Noise Monitoring

4

5

5.1

- 5.2 All staff must report unusual or abnormal noise to Site Management, in accordance with the requirements of the Noise Procedure within the EMS.
- 5.3 Noise monitoring may be undertaken, following multiple complaints regarding noise, to identify the potential source and level of the noise to ensure appropriate control measures are put in place.

## Processes to Manage Noise

**Table 5.2 Description of Processes to Ensure Noise is Managed.**

Description of procedure	Procedure	When this will be carried out?	Corrective action
Replacing old / faulty equipment	Procurement of new equipment	When equipment requires replacing	Replace equipment that have sound levels which are equivalent or lower sound levels compared to existing equipment
EMS Procedures – Noise Procedure	Noise Procedure	At staff induction, following changes to the Noise Procedure and when a need for refresher training is identified.	Refresher training provided for staff on the Noise Procedure if the requirements of this are not being fully implemented.
EMS procedures – Maintenance Procedure	Planned Preventative Maintenance and Inspections checklist	Annually, monthly, weekly	Routine inspections will be undertaken to ensure that the Site is maintained to ensure noise is minimised. Inspections will cover site surfacing, plant etc.
EMS Procedures – Staff Training Procedure	Staff Training and Induction Procedure	Induction procedure requires that staff receive training on the Noise Procedure.	Refresher training will be provided should a need be identified i.e. staff not following Noise Procedure within the EMS.



## 6. Complaints Reporting

- 6.1 In the case of any incidents that cause significant noise emissions, staff will report the incident to the Site Manager.
- 6.2 The Site Manager will record the incident and any steps taken to resolve the issue e.g., pausing operation or repairing failing machinery. Procedures and forms regarding the incidents and accidents are included within the EMS.
- 6.3 If the incident resulted in a complaint being received, a Complaint Form, associated with the Complaint Procedure will be completed. All complaints are investigated and recorded in accordance with the EMS Procedures.
- 6.4 The completed Complaint Form will include information on the complaint, the investigation and any remedial action taken, see Appendix 3 Complaint Form.
- 6.5 It is the responsibility of the Site Manager or their delegate to complete the Complaints Form as soon as possible after receiving a complaint.
- 6.6 Staff will investigate all complaints to identify the source of the problem. The investigation may include the following:
  - Travel to the site from which the complaint is reported to originate to make checks on noise levels if these are reported as on-going.
  - Ensuring the inspections of plant /equipment have been completed.
  - Aural monitoring of noise emissions from the area from which the noise originated.
  - If noise is detectable, identification of where the noise may be originating.
- 6.7 If the source is not from the Site and is attributable to another source, the complainant will be notified, and the source recorded. If the source of the noise is found to be from the Site, the complainant will be notified as part of the response to the complainant.
- 6.8 The Operator will then go about identifying the reason for the noise emission e.g., breach of procedure, training, mitigation or increase in noise at the source.
- 6.9 Records of any monitoring carried out as part of the complaint investigation process will be kept with the completed complaint form.
- 6.10 A complaint is considered to be resolved when the source of the noise is identified, and remedial action is taken (if required) and relevant persons notified. Feedback may be requested from the complainant to check they are satisfied with the outcome.
- 6.11 Should the investigation identify the need for additional mitigation or other remedial action, the appropriate mitigation / action will be implemented as soon as practicable.



## **Drawings**

Drawing No. 21/001e 001

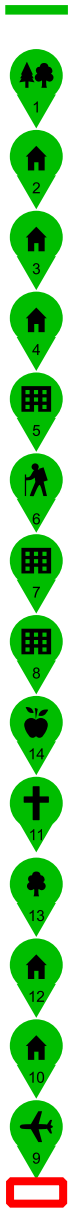
Sensitive Receptors Plan

Drawing No. 21/001c 002

Site Layout Plan

# Legend

- Boundary
- Local Wildlife Site & BAP
- Residential
- Residential
- Residential
- Pet Groomer
- Hiking Area
- Commercial Units
- Commercial Units
- Farm
- Church
- Park
- Thorpe Marriott - Residential
- Residential
- Airfield
- Radius - Approx 1km



BB Contracting Limited

Sensitive Receptors

21/001e 001

Brands Farm Recycling Facility  
Off Brands Lane  
Felthorpe  
Norwich  
NR10 4EA

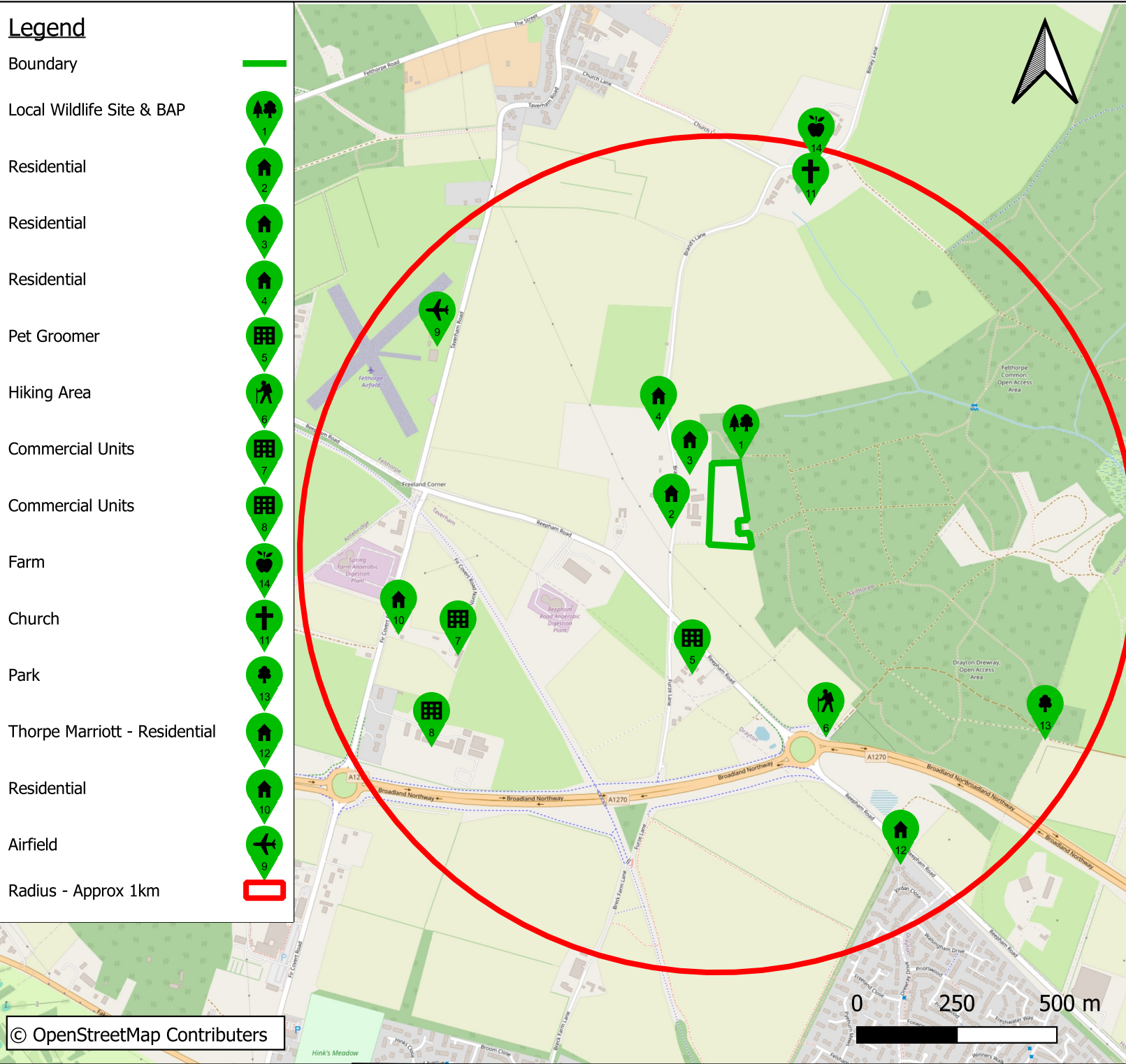
Scale: 1:22000

Created: 23th June 2025

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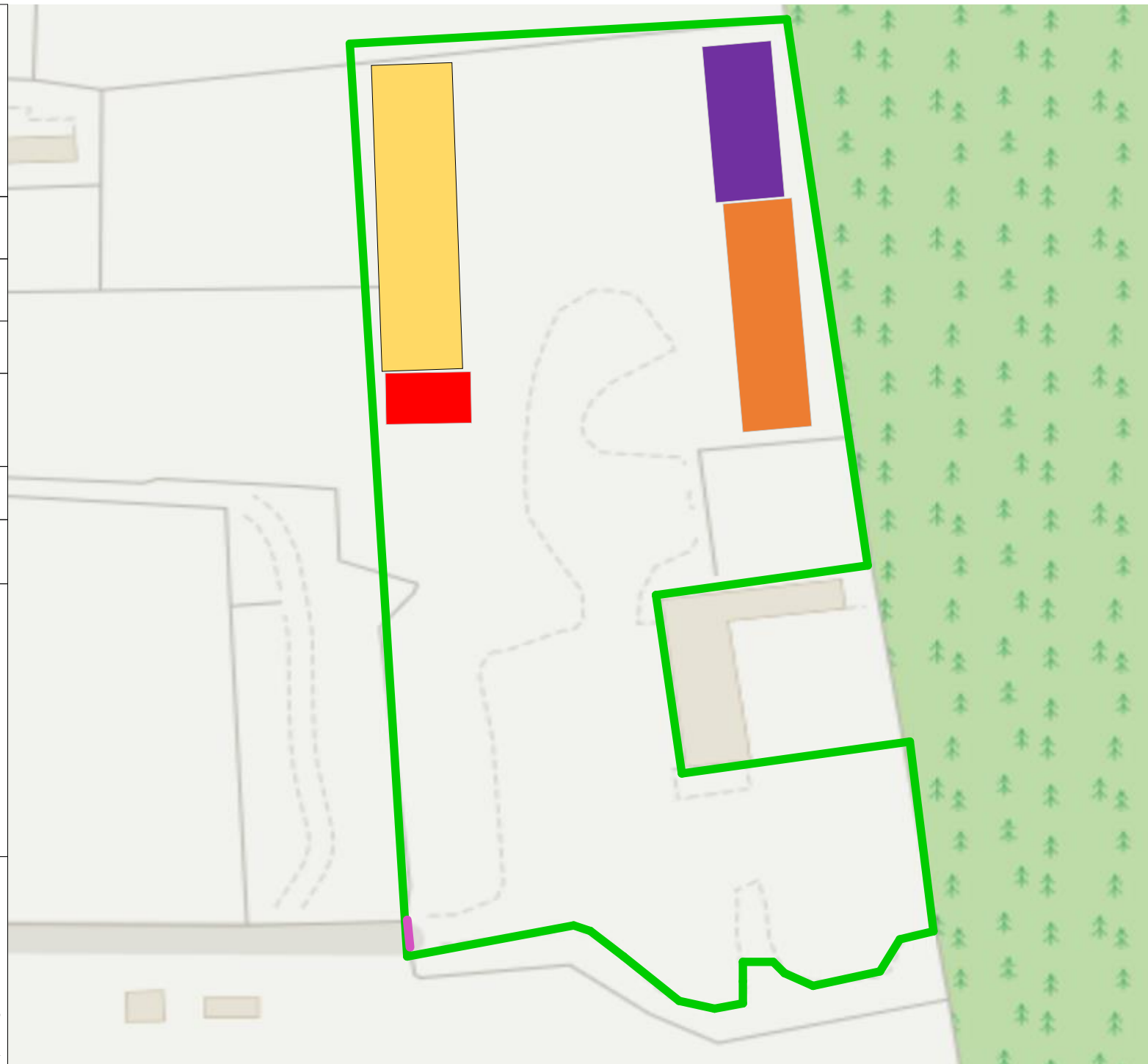
<b>Client</b>	BB Contracting Limited
<b>Title</b>	Site Layout Plan
<b>Dwg No.</b>	21/001c 002
<b>Site</b>	Land off Brands Lane, Brands Lane, Felthorpe, NR10 4EA
<b>Scale</b>	Not to scale
<b>Date</b>	01/03/2021

<b>Key</b>	
	Permit Boundary
	Entrance/exit
	Storage Area
	Quarantine Area
	Screener Processing Area
	Crushing Plant Area



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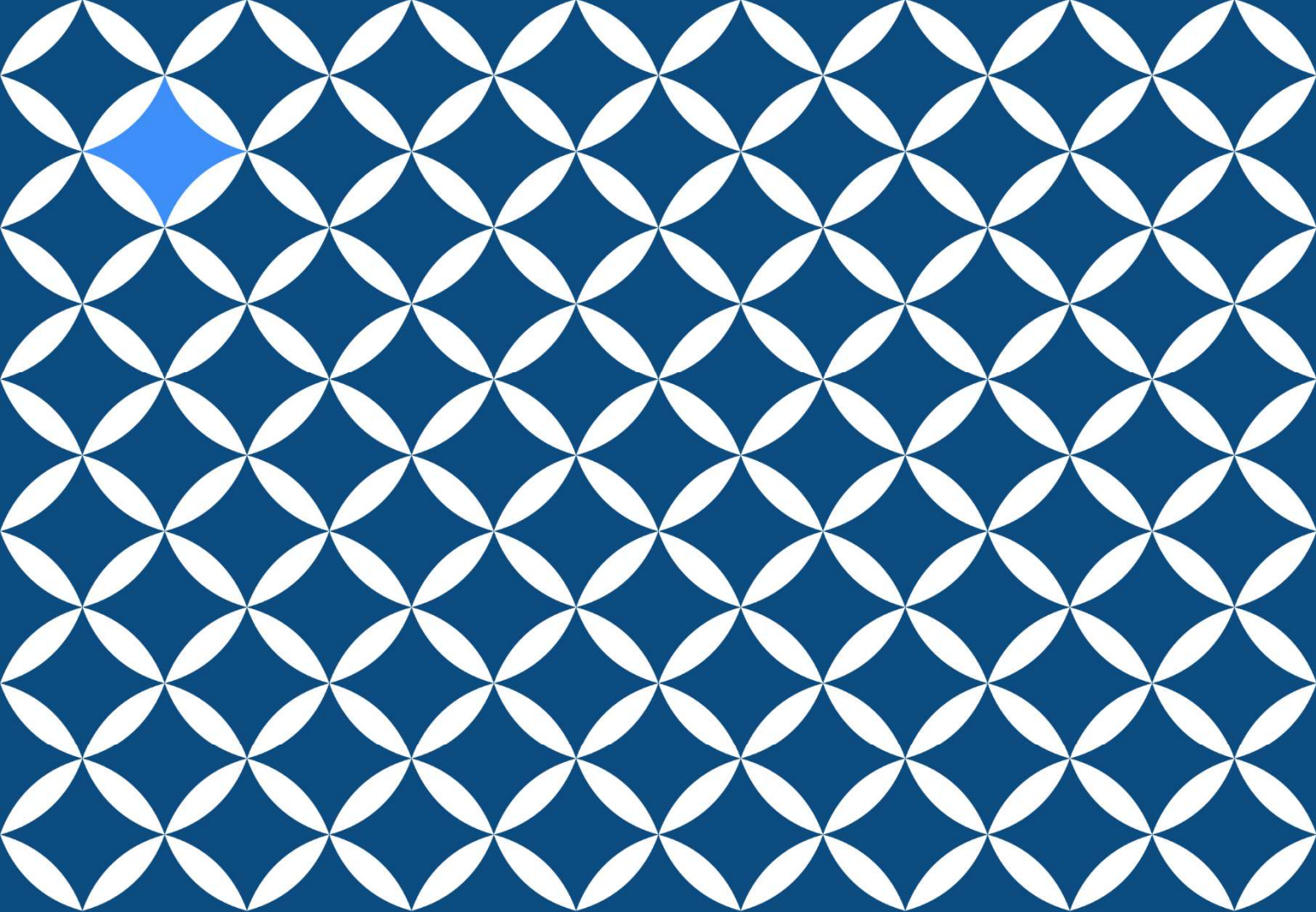
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## **Appendix 1**

### Noise Impact Assessment



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## **BB Contracting Limited, Norfolk**

Environmental Noise Impact Assessment

P2712-REP01-BDH


08 August 2025

**PROJECT** BB Contracting Limited, Norfolk  
 Environmental Noise Impact Assessment

**CLIENT** BB Contracting Limited  
 Shooting Gate Lodge  
 Brand's Lane  
 Felthorpe  
 Norwich  
 NR10 4EA

**DOCUMENT REFERENCE** P2712-REP01-BDH

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 BRIAN HORNER

**CHECKED**   
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 JOE SINKER

**DATE** 08 / 08 / 2025

**REVISIONS**

Reviewer	Date	Description

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**Name of Organisation** Sol Acoustics Limited

**Company Registration Number** 4218702

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## 1 Executive Summary

- 1.1 Sol Acoustics Ltd ("Sol") has been appointed to provide an Environmental Noise Impact Assessment ("NIA") and Noise Management Plan ("NMP") for the existing BB Contracting Norfolk material processing facility that is located on Shooting Gate Lodge, Brand's Lane, Felthorpe, Norwich NR10 4EA (hereinafter referred to as the "Facility").
- 1.2 This acoustic assessment report considers the environmental noise impact as arising from the operation of all plant and processes that are associated with the Facility, at the nearest noise sensitive receptors during the current hours of operation.
- 1.3 The environmental noise climate at the identified NSRs has been measured by Sol between Thursday 17<sup>th</sup> July and Thursday 24<sup>th</sup> July 2025 (inclusive). Using this benchmark environmental noise measurement data, it has been possible to assess the magnitude of the noise impact from the Facility.
- 1.4 The environmental noise emissions that shall be arising from the operation of the Facility has been quantified, modelled, and assessed using proprietary "CadnaA" 3D noise modelling software.
-  1.5 ***It is the conclusion of this environmental noise impact assessment that the predicted total, aggregate environmental noise impact as arising from the operation of the Facility results in a "sub adverse" noise impact at the worst affected noise sensitive receptors, all as assessed in accordance with British Standard BS4142: 2014+A1: 2019.***

## 2 Introduction

2.1 Sol Acoustics Ltd ("Sol") has been appointed to provide an Environmental Noise Impact Assessment ("NIA") and Noise Management Plan ("NMP") for the existing BB Contracting Norfolk material processing facility that is located on Shooting Gate Lodge, Brand's Lane, Felthorpe, Norwich, NR10 4EA (hereinafter referred to as the "Facility"). The purpose of this acoustic assessment is as follows:

- ◆ Identify the nearest pre-existing noise sensitive receptors ("NSRs") that are most likely to be affected by environmental noise arising from plant and/or process noise that is associated with the Facility.
- ◆ Determine the prevailing, pre-existing baseline background and residual noise climate at the worst affected (residential) NSR, through direct, environmental noise measurement.
- ◆ Identify all significant noise sources associated with the Facility.
- ◆ Calculate the resultant environmental noise level contribution and impact at the nearest NSRs to the Facility, taking factors such as distance to receptors, acoustic screening, and other environmental features into consideration.
- ◆ Carry out an environmental noise assessment of the Facility in accordance with the assessment methodology that is prescribed in relevant Standards (e.g. British Standard 4142: 2014+A1: 2019) and other acoustic guidance, in order to determine the likely significance of the noise impact generated.
- ◆ Produce a Noise Management Plan, detailing all appropriate noise mitigation as deemed necessary, based on the results of the acoustic modelling.

2.2 This acoustic report is structured as follows:

- ◆ Section 3 provides a basic description of the Facility and key surrounding NSRs.
- ◆ Section 4 provides summary details of the benchmark environmental noise survey undertaken in order to determine the pre-existing environmental noise climate at the identified NSRs.
- ◆ Section 5 provides the results of the benchmark environmental noise survey.
- ◆ Section 6 provides a summary of the pertinent acoustic Standards which have been used to assess the magnitude of the noise impact likely to be generated by the Facility.
- ◆ Section 7 provides a summary of the proprietary 3D acoustic models constructed and acoustic calculations undertaken.
- ◆ Section 8 provides an acoustic assessment of the Facility.
- ◆ Section 9 provides a conclusion statement.
- ◆ Appendix A provides a glossary of acoustic terminology.
- ◆ Appendix B provides details of the noise surveys undertaken and a summary of the data obtained from these.
- ◆ Appendix C provides a detailed site plan showing the approximate location of significant site plant as located at the Facility.
- ◆ Appendix D provides details of the 3D computer noise model as constructed for this project.
- ◆ Appendix E provides an outline description of all key noise sources and provides plant noise levels which must not be exceeded.
- ◆ Appendix F gives details and qualifications of contributing Sol Acoustics' staff.

### 3 Description of Site

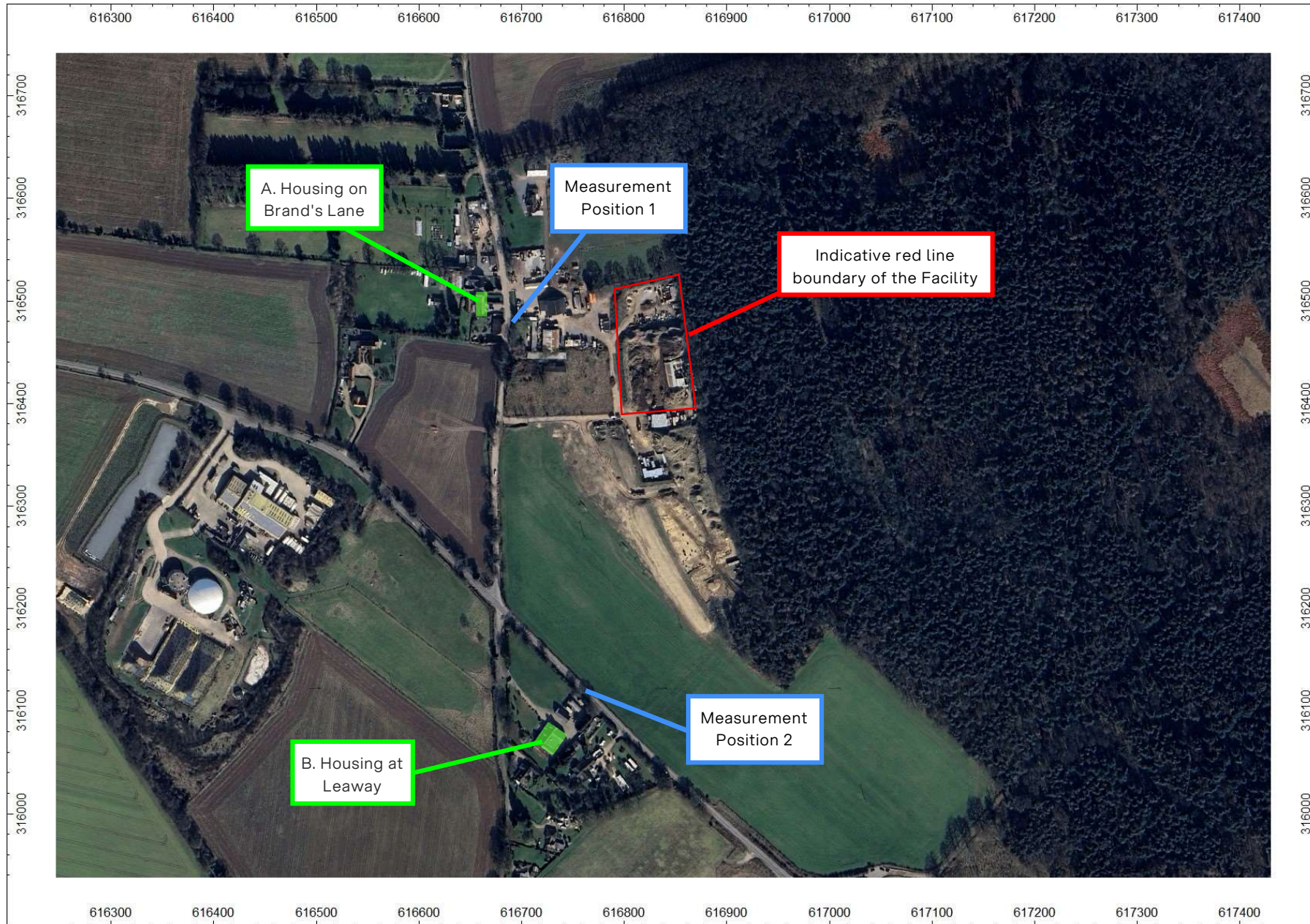
#### 3.1 General Overview and Noise Sensitive Receptors (NSRs)

3.1.1 The Facility is located off Brands Lane in Felthorpe, Norwich, NR10 4EA in a rural setting. The nearest identified existing residential receptors to the Facility are as follows:

- A. Two storey housing on Brand's Lane, located c.110 metres distance to the west
- B. Two storey housing at Leaway, located c.310 metres distance to the south

3.1.2 In addition to residential housing, the Facility is bound by protected woodland habitats directly to the east. It is not known whether this is noise sensitive. Sol has been informed that there is currently no Ecologist appointed on the project. Sol is not able to determine appropriate noise limits to apply at these receptors without specific guidance from an Ecologist and therefore the noise impact on the woodland areas is scoped out of this Environmental Noise Impact Assessment report. However, the predicted Specific Sound Levels from the operation of the Facility at the locations of the woodland habitats are shown in Figure D1 and D2 of Appendix D and could be used to assess the noise impact on the woodland habitat if subsequently required.

3.1.3 Figure 1 overleaf indicates the location of the Facility in relation to the above residential NSRs, and also the corresponding locations of the noise monitoring positions that have been used in order to inform this acoustic assessment (all as discussed in Section 4 of this report).



**Figure 1: Aerial photo overlaid with noise sensitive receptors and monitoring locations in relation to the Facility (Google 2025)**

## 3.2 Characteristics of the Facility

- 3.2.1 The Facility accepts concrete, soil and stones, asphalt and sand. The waste is processed to generate recycled aggregates.
- 3.2.2 Figure 2 indicates the site layout of the Facility.

### Operating Times

- 3.2.3 The Facility operates during the following periods:
- ◆ Monday to Friday 7:30 hours to 17:30 hours
  - ◆ Saturdays 08:00 to 16:00 hours

### Mobile Plant

- 3.2.4 The following items of mobile plant operates at the Facility, along with their assumed utilisation:
- ◆ 1 no. J40 McCloskey crusher (operational once or twice per month) : 100% utilisation.
  - ◆ 1 no. McCloskey TS4065 conveyor: 100% utilisation.
  - ◆ 1 no. DX 225LC Excavator: 100% utilisation.
  - ◆ 1 no. Volvo L120E wheeled loader: 100% utilisation.
  - ◆ 1 no. Terex 883+ screener: 100% utilisation.

### Site Deliveries and Collections

- 3.2.5 The Client has informed to Sol that up to 50 HGV collections/deliveries typically could occur per day, as occurring during the site operating periods.

### Measured Noise Output of individual Plant

- 3.2.6 Sol attended the existing and operational Facility during Thursday 17<sup>th</sup> July 2025 in order to measure the noise level emissions from the plant.
- 3.2.7 *Appendix E provides a full inventory of all identified acoustically significant plant and processes which have the potential to create an environmental noise impact at nearby NSRs; this information has been used to inform this acoustic assessment. The location of the noise sources are shown in Appendix C.*

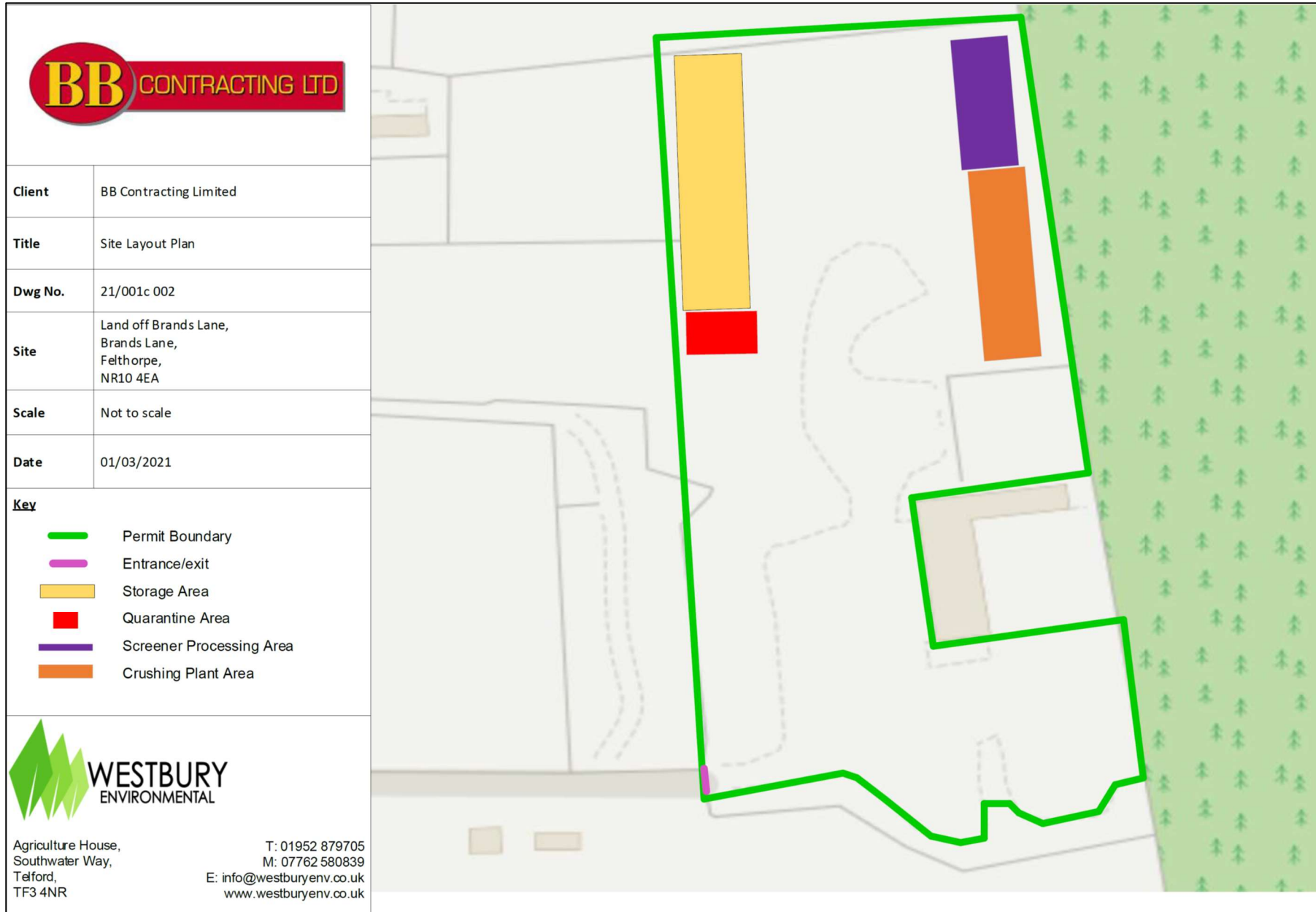


Figure 2: Site plan of the Facility

## 4 Details of Investigation

### 4.1 Pre-Existing Environmental Noise Climate

4.1.1 In order to inform this environmental noise benchmarking assessment, an environmental noise survey has been conducted by Sol between c.13:00 hours during Thursday 17<sup>th</sup> July and c.08:15 hours during Thursday 24<sup>th</sup> July 2025. The purpose of the noise survey was to determine the prevailing pre-existing Background Sound Levels typically prevailing as at the nearest noise sensitive premises to the Facility, as during typical weekend and weekday, daytime and nighttime periods, for the purposes of environmental noise benchmarking and subsequent acoustic impact assessment.

4.1.2 The environmental noise survey consisted of two environmental noise measurement positions as follows:

- ◆ **Measurement Position 1:** Mast-mounted microphone at c.3.2 metres above local ground level, on the opposite side of the road from the housing at Brand's Lane. The microphone was mounted in so-called "free-field" acoustic conditions and located away from foliage etc. Key noise sources included road traffic noise and wildlife.
- ◆ **Measurement Position 2:** Mast-mounted microphone at c.1.8 metres above local ground level, alongside road side on the opposite side of the road from the housing at Leaway. The microphone was mounted in so-called "free-field" acoustic conditions. Key noise sources included road traffic noise and wildlife.

4.1.3 The location of the noise monitoring position in relation to key existing environmental noise sources is shown in Figure 1. *The full measurement results are as presented in Appendix B.*

4.1.4 The noise survey was conducted using Type 1 Precision Grade noise monitoring equipment. The complete sound measuring systems were field-calibrated immediately prior to and following the noise survey period. (Full details of all the instrumentation used are retained on file by Sol, including traceable calibration records; these are available for review if needed).

4.1.5 Meteorological data was recorded at Noise Monitoring Position 2 for the duration of the noise survey, as using a Professional Grade Vaisala type "WXT530" weather station. Environmental noise measurements as recorded during periods of unfavourable weather conditions (i.e. wind speeds above 5ms<sup>-1</sup> and rainfall exceeding 1mmh<sup>-1</sup>) have been omitted from assessment. Notwithstanding the weather conditions recorded, the microphone system was entirely weatherproofed and fitted with all-weather environmental windshield, with bird spike also.

## 5 Environmental Noise Survey Results

### 5.1 Pre-Existing Environmental Noise Climate

5.1.1 Appendix B provides fully detailed time history information for the environmental noise levels as recorded for the duration of the environmental noise survey.

5.1.2 Table 1 below provides a basic summary of the typical overall, A-weighted noise levels measured at the various noise measurement positions, in  $L_{Aeq,T}$  and  $L_{A90,15min}$  terms:

Position	Date	Daytime Hours of Operation (07:00 – 17:30hrs)		Daytime Site Closed (17:30 – 23:00 hrs)		Nighttime (23:00 – 07:00hrs)	
		dB $L_{Aeq,T}$	dB $L_{A90,15min}$ Typical	dB $L_{Aeq,T}$	dB $L_{A90,15min}$ Typical	dB $L_{Aeq,T}$	dB $L_{A90,15min}$ Typical
1	Thursday 17 <sup>th</sup> July 2025	56	41	52	33	46	26
	Friday 18 <sup>th</sup> July 2025	56	41	52	35	43	28
	Saturday 19 <sup>th</sup> July 2025	55	<b>38</b>	54	32	43	30
	Sunday 20 <sup>th</sup> July 2025	54	39	52	32	50	29
	Monday 21 <sup>st</sup> July 2025	60	40	52	36	47	35
	Tuesday 22 <sup>nd</sup> July 2025	56	42	53	35	48	34
	Wednesday 23 <sup>rd</sup> July 2025	61	41	58	34	48	26
2	Thursday 17 <sup>th</sup> July 2025	71	42	68	36	63	30
	Friday 18 <sup>th</sup> July 2025	71	42	70	38	60	31
	Saturday 19 <sup>th</sup> July 2025	70	41	67	37	59	33
	Sunday 20 <sup>th</sup> July 2025	70	<b>39</b>	66	35	64	32
	Monday 21 <sup>st</sup> July 2025	72	42	68	38	63	35
	Tuesday 22 <sup>nd</sup> July 2025	71	46	68	38	64	36
	Wednesday 23 <sup>rd</sup> July 2025	74	48	72	41	65	35
	Thursday 24 <sup>th</sup> July 2025	75	55	-	-	-	-

**Table 1: Summary of typical, measured broadband environmental noise levels**

5.1.3 The Facility was operation on between 07:00 hours and 17:30 hours on Monday to Friday. Therefore, measurements undertaken during these periods may include noise from the Facility and are therefore not true Background Sound Level measurements. However, the noise measurements as conducted between 07:00 hours and 17:30 hours on Saturday and Sunday exclude noise from the operation of the Facility. These noise levels are highlighted in **bold italic** in Table 1 and shall therefore form the basis of this assessment.

## 6 Environmental Noise Performance Specification Requirements

### 6.1 Guidance on Noise and Vibration Management: Environmental Permits

6.1.1 Published by the Environment Agency ("EA"), Scottish Environment Protection Agency ("SEPA"), Natural Resources Wales ("NRW") and Northern Ireland Environment Agency (collectively referred to as the "Environment Agencies") during 23<sup>rd</sup> July 2021, and subsequently updated 31<sup>st</sup> January 2022, this guidance sets out the minimum requirements for environmental noise and vibration impact assessments, as required to support a Permit Application. It replaces the Environment Agency's previous Horizontal Guidance for Noise (H3), Parts 1 and 2. The key requirements of the guidance, which are applicable to this assessment, are as presented below:

- ◆ The environmental noise impact assessment must be undertaken in accordance with British Standard BS4142: 2014+A1: 2019: *'Method for rating and assessing industrial and commercial sound'*. A summary of this Standard is provided in Section 6.2.
- ◆ The acoustic character of the sound generated must be considered. This must consider whether the sound is tonal, impulsive, or intermittent in operation. For industrial noise sources where the sound is neither impulsive nor tonal, but is readily distinguishable against the residual acoustic environment, the Environment Agency will expect a minimum acoustic character correction of +3dB unless otherwise justified.
- ◆ The BS4142:2014+A1:2019-defined Background Sound Levels and Residual Sound Levels as used to inform the assessment must not include noise from the Facility. Where it is pre-existing, the Facility must not be operational during the environmental noise level measurements.
- ◆ Noise arising from the normal operation of the Facility (must not result in a BS4142:2014+A1:2019 defined 'significant adverse impact' (following consideration of the context) at the surrounding NSRs. The "Environment Agencies" will not issue a Permit where the site is, or predicted to be, operating at (or above) this level.
- ◆ As stated above, the guidance recognises that the context of the situation can affect the outcome of the BS4142:2014+A1:2019 assessment but states that there are practical limits. The guidance stipulates that it is unlikely to be acceptable to adjust the magnitude of the impact beyond the next BS4142:2014+A1:2019 assessment magnitude band (e.g., suggesting that a Rating Level of around 10dB above the Background Sound level – defined by the Standard as a "significantly adverse" impact, depending on the context - is actually a "low impact" purely on the grounds of context etc.).

6.1.2 Notwithstanding the above, the assessment must demonstrate that Best Available Techniques ("BAT") has been applied to prevent or minimise noise emissions.

## 6.2 BS4142: 2014+A1: 2019 *'Method for rating and assessing industrial and commercial sound'*

- 6.2.1 BS 4142: 2014+A1: 2019: *'Method for rating and assessing industrial and commercial sound'* is intended to be used to assess noise of an industrial nature, which includes sound from fixed installations comprising of mechanical and/or electrical plant and equipment. The methods prescribed in this British Standard use outdoor sound levels in order to assess the likely effects of sound on people who might be inside or outside a dwelling or premises that is used for residential purposes upon which sound is incident.
- 6.2.2 The procedure contained in BS 4142: 2014+A1: 2019 for assessing environmental noise impact is to compare the measured or predicted noise level from the source in question - the "Specific Sound Level" immediately outside the noise sensitive premises - with the corresponding "Background Sound Level". Where the noise contains attention attracting characteristics such as tonal, impulsive and/or intermittent elements, it may be appropriate to apply a correction to the Specific Sound Level in order to obtain the "Rating Level."
- 6.2.3 BS 4142: 2014+A1: 2019 states that the significance of sound arising from an industrial and/or commercial nature depends upon both the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, and also the context in which the sound occurs:
- a) Typically, the greater this 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 Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.
- 6.2.4 For the daytime, the assessment is conducted over a one-hour period, and over a 15-minute period at night. The daytime and nighttime periods are defined as occurring between 07:00 hours to 23:00 hours, and 23:00 hours to 07:00 hours, respectively.
- 6.2.5 For BS 4142:2014+A1:2019 assessment purposes, it is necessary to determine the typical Background Sound Level as occurring during each assessment period. Section 8.1 of BS 4142:2014+A1:2019 states the following:

*'... 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 ...'*

- 6.2.6 The typical Background Sound Level has been determined based upon statistical analysis of the full, measured dataset (in histogram form, and considering the modes and median of the data sets).

6.2.7 Table 2 specifies the *typical* Background Sound Levels at each of the identified NSRs:

Noise Sensitive Receptors	Representative Noise Measurement Position	<i>Typical</i> Background Sound Level During Operating Hours (Monday to Friday 07:30 – 17:30) dB $L_{A90,15min}$
A. Brand's lane (c.110 metres to the west)	1	38
B. Leaway (c.310 metres to the south)	2	39

**Table 2:** *Typical* Background Sound Level at each assessed NSR

## 7 Environmental Noise Model

### 7.1 Methodology and Basis of 3D Environmental Noise Models

7.1.1 In order to predict the likely noise levels impinging on the surrounding noise sensitive receptors, proprietary 3D computer noise models were created using the DataKustik "CadnaA" noise mapping software. The following assumptions have been made when generating the noise model:

- (a) The noise model was set up to apply the noise prediction methodology set out in ISO 9613-2:2024 '*Acoustics — Attenuation of sound during propagation outdoors Part 2: Engineering method for the prediction of sound pressure levels outdoors.*
- (b) The model was set to include third order reflected noise from solid structures.
- (c) Ground absorption, as defined in ISO 9613-2:2024, has been taken into consideration. The base ground absorption for the model has been set to G=1.0 (soft ground). The ground absorption for large tarmacked areas has been set to G=0.0 (hard ground).
- (d) The existing land topography of the site and surrounding area up to and including the nearest NSR has been taken into consideration in the assessment. Third party topographical information has been obtained from open source data as available from DEFRA.
- (e) The noise impact as expected the surrounding residential receptors has been modelled at a height of and 4 metres above local ground level (first floor height).
- (f) The noise model assumes that on average up to 4 HGVs arrive at and depart from the Facility during a typical 1-hour daytime assessment period as during daytime periods. No HGVs are expected to arrive at, nor depart from the Facility outside the site's operating periods or during nighttime period.
- (g) HGVs have been modelled as a moving point source as at an average speed of 10mph and at a height of 1 metre above local ground level.
- (h) All external mobile plant noise sources have been modelled as point sources.

7.1.2 Figure 3 provides a three-dimensional visualisation of the noise model used to inform the noise impact assessment.

7.1.3 *Appendix D provides further information in respect of the 3D computer environmental noise model.*

7.1.4 *Appendix E provides an inventory of plant and process source noise level data; these form the basis of the 3D noise model underpinning the report. These shall not be exceeded.*

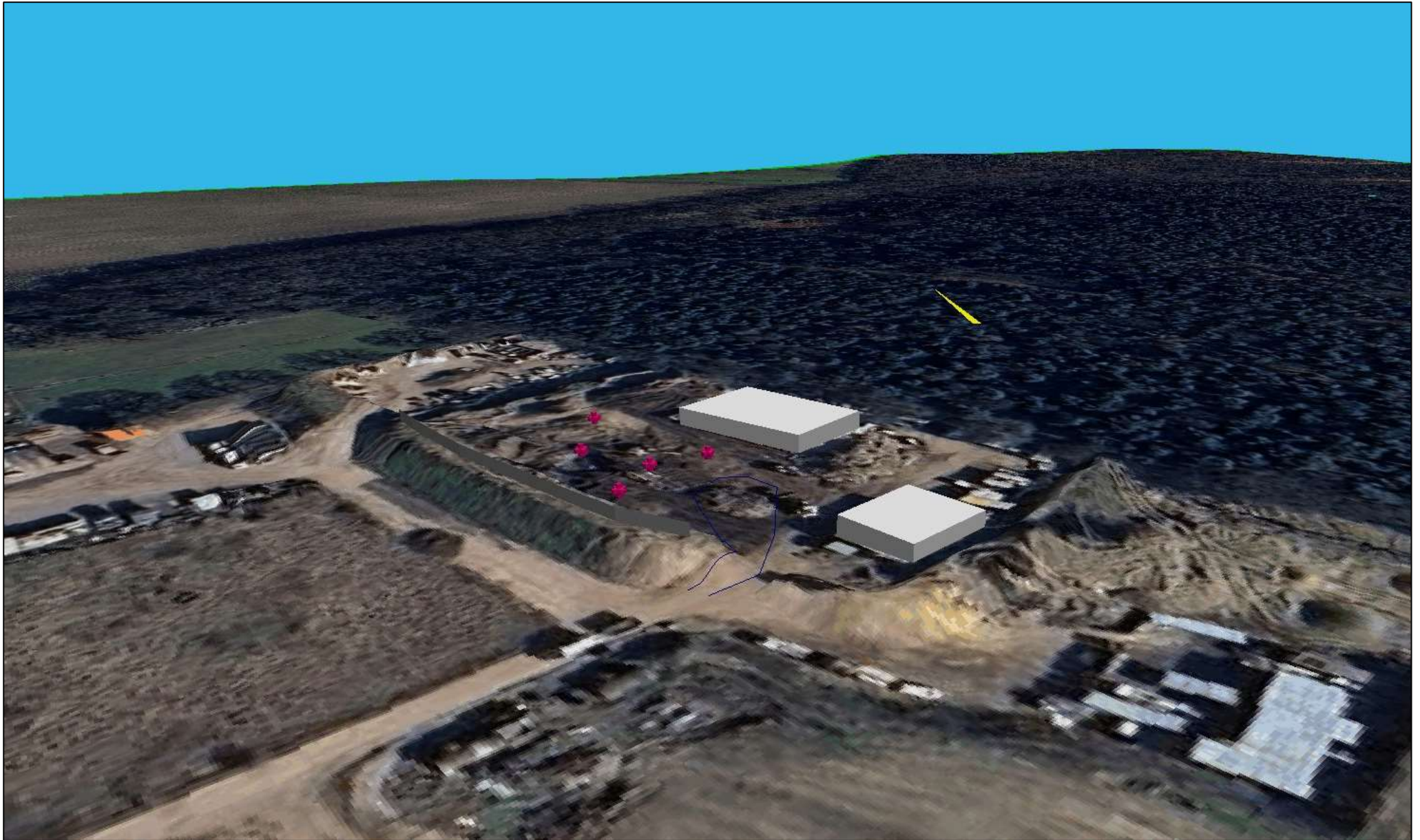


Figure 3: 3D view of the noise model of the Facility (Google 2025)

## 8 Environmental Noise Impact Assessment

### 8.1 Noise Impact Assessment

- 8.1.1 *Appendix D provides full details of CadnaA noise maps which present the daytime Specific Sound Levels expected.*
- 8.1.2 The BS4142:2014+A1:2019 defined Rating Level has been determined from the predicted Specific Sound Level, as determined from the 3D noise model of the Facility, and by applying a correction for the acoustic character of the sound. In accordance with BS4142, a conservative correction of +3dB has been applied to the calculated Specific Sound Level, as arising at the noise sensitive receptors from the Facility, in order to allow for any residual "readily distinctive" acoustic features, in order to determine the BS4142 defined Rating Level for acoustic assessment purposes.
- 8.1.3 Table 3 provides a preliminary BS4142:2014+A1:2019 assessment of each of the identified NSRs as during the hours of operation. As stated in Section 3.2, the crusher is anticipated to operate only once or twice per month. Therefore, calculations have been undertaken with and without the crusher operating:

Noise Sensitive Receptor	Scenario	3D Noise Model Predicted Specific Level, dB $L_{Aeq,T}$	Acoustic Character Correction, dB	Predicted Rating Level, dB $L_{Ar,T}$	Typical Background Sound Level, dB $L_{A90}$	Rating Level sub. Background $\pm$ dB
A. Brand's Lane (c.110 metres to the west)	Crusher operating (once/twice per month)	42	+3	45	38	<b>+7</b>
	Crusher not operating	40	+3	43	38	<b>+5</b>
B. Leaway (c.310 metres to the south)	Crusher operating (once/twice per month)	44	+3	47	39	<b>+8</b>
	Crusher not operating	39	+3	42	39	<b>+3</b>
<b>* Key</b> Green: low impact (less than or equal to 0dB) Amber: sub-adverse impact to adverse impact (i.e. +1dB to +5dB) Red: adverse to significant adverse impact (+6dB or higher)						

**Table 3: BS4142:2014+A1:2019 preliminary assessment during hours of operation**

- 8.1.4 With the crusher operating, the total, aggregate environmental noise impact as arising from the operation of the Facility exceeds the typical Background Sound Level by up to +8dB as during the hours of operation at the existing residential housing on Leaway. This is above the threshold for an indication of an '*...adverse impact, depending on the context ...*' in BS4142:2014+A1:2019 terms.
- 8.1.5 When the crusher is not operation, the total, aggregate environmental noise impact as arising from the operation of the Facility exceeds the typical Background Sound Level by up to +5dB as during the hours of operation at the existing residential housing on Brand's Lane. This is an indication of an '*...adverse impact, depending on the context ...*' in BS4142:2014+A1:2019 terms.
- 8.1.6 The predicted magnitude of the impact is subject to the consideration of context. The Department of the Environment guidance: '*Method implementation document (MID) for BS 4142*' states that both weekday/weekend operation and the hours of operation are factors that can make receptors less noise sensitive. The site only operates during the weekdays, with no operational at all at the weekend. Additionally, the site only operates in the daytime hours and finishes operation early in the afternoon, meaning the site is not operational during the more critical evening periods.
- 8.1.7 Therefore, taking the context in which the sound occurs into consideration, noise from the Facility is **not expected to result in an adverse noise level impact, i.e., "sub-adverse"**.

## 8.2 Noise Management Plan ("NMP")

- 8.2.1 The provisional, outline noise mitigation measures that are required and are assumed to be in place by this noise assessment report (and are specifically required) are as summarised below.
- (a) **General:** All HGVs, mobile plant etc. under the direct control of the Operator must only use non-intrusive broadband noise type vehicle reversing alarms and/or reversing cameras. There must be no use of pulsed and/or tonal reversing alarms (e.g. reversing beepers).
  - (b) **Operating times:** Plant operations must only take place between 07:30 – 17:30 hours during Monday to Friday (excluding Bank Holidays).
  - (c) **HGV collections/deliveries:** Deliveries to and from the Facility must only take place between 07:30 – 17:30 hours during Monday to Friday (excluding bank holidays).
  - (d) **Acoustic fencing or earth bund:** An acoustic fence/earth bund with a combined height of 5 metres is required to be installed to the west of the Facility proposed crusher Location B. The bund/fence can be constructed from either a new fence or earth bund or a combination of the two providing that the (combined) minimum height is 5 metres and is installed to the extent as shown in Figure 4. In order for a fence to be effective, it must be solid, imperforate (with absolutely no gaps), sealed to the base and to provide a surface mass per unit area of at least 12.5 kg/m<sup>2</sup> (i.e. could be constructed using a timber fence but could be concrete lego block if preferred from a durability perspective). The existing earth bund as located in this location can be included in the height.



Figure 4: Location of the existing earth bund (Google 2025)

## 8.3 Uncertainty


8.3.1 Section 10 of BS4142: 2014 states the following with regards to uncertainty:

*'... Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty. Report the level and potential effects of uncertainty...'*

8.3.2 In accordance with the requirements of BS4142, Sol has undertaken the following steps to limit the level of uncertainty in the acoustic assessment:

1. All noise measurements have been carried out using Type 1 Precision Grade noise mounting equipment. All noise measuring instruments have traceable laboratory calibration certification.
2. All noise measurements were accompanied by continuous meteorological measurements as conducted at, or close to, the measurement position in order to ensure that the measurement data was not adversely affected by unfavourable weather conditions.
3. Calculations have been conducted in line with appropriate and nationally recognised acoustic standards (ISO 9613-2, BS12354: 2000), and using proprietary 3D noise modelling software, CadnaA.
4. The assessment assumes downwind propagation in all cases as this represents the worst case.

## 9 Conclusion

- 9.1 Sol has been appointed to provide an Environmental Noise Impact Assessment ("NIA") and Noise Management Plan ("NMP") for the existing BB Contracting Norfolk material processing facility that is located on Shooting Gate Lodge, Brand's Lane, Felthorpe, Norwich, NR10 4EA.
- 9.2 This acoustic assessment report considers the environmental noise impact as arising from the operation of all plant and processes that are associated with the Facility, at the nearest noise sensitive receptors during the current hours of operation.
- 9.3 The environmental noise climate at the identified NSRs has been measured by Sol between Thursday 17<sup>th</sup> July and Thursday 24<sup>th</sup> July 2025 (inclusive).
- 9.4 Using this benchmark environmental noise measurement data, it has been possible to assess the magnitude of the noise impact from the Facility, all as based on applicable Planning Permitting Policy.
- 9.5 The environmental noise emissions that shall be arising from the operation of the Facility has been quantified, modelled, and assessed using proprietary "CadnaA" 3D noise modelling software.
-  9.6 ***It is the conclusion of this environmental noise impact assessment that the predicted total, aggregate environmental noise impact as arising from the operation of the Facility results in a "sub adverse" noise impact at the worst affected noise sensitive receptors, all as assessed in accordance with British Standard BS4142: 2014+A1: 2019.***

## APPENDIX A

### Glossary of Acoustic Terms

Term	Abbreviation	Description
Decibel	dB	A scale for comparing the ratios of two quantities, including sound pressure and sound power.
A-weighting	dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the change in sensitivity of the human ear at varying frequencies.
Sound Pressure Level	$L_{pA}$	A measure of the sound pressure at a particular location. Typically expressed in dB(A) referenced to $2 \times 10^{-5}$ Pascals.
Equivalent Continuous Sound Level	$L_{Aeq,T}$	The steady level of sound over a prescribed period of time which would contain the same total sound energy as the actual fluctuating noise under consideration in the same period of time.
Statistical Sound Levels	$L_{A10}$ and $L_{A90}$	The level of noise exceeded for a percentage of the time period being sampled, namely 10% or 90% respectively.
Background Sound Level	$L_{A90,T}$	The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of the time period being sampled.
Maximum Sound Level	$L_{Amax}$	The maximum sound or noise level determined with instrumentation set to either a fast time weighting, $L_{AFmax}$ , or a slow time weighting, $L_{ASmax}$ , as occurring during the time period being sampled.
Sound Power Level	$L_{WA}$	A measure of the total sound energy radiated from a source. Like sound pressure levels, this is also expressed in dB(A) terms, but it is referenced to $1 \times 10^{-12}$ W.
Broadband		Sound sampled over a wide range of frequencies.
Narrow band		Sound sampled over a specific, restricted frequency range. Used to ascertain the amplitude and significant of individual, audible tones, and to assist in identifying particular sources of noise within a complex, multi-source soundscape environment.
Ambient Sound	$L_{eq,T}$	Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, both near and far.
Specific Sound Level	$L_{eq,T}$	The Equivalent Continuous A-Weighted Sound Level at an assessment position produced by a specific sound over a given reference time interval, $T_r$
Rating Level	$L_{Ar,T_r}$	The Specific Sound Level plus any adjustment for the acoustic characteristic features of the noise (e.g. intermittency, tones etc.).
Residual Noise	$L_{Aeq,T}$	The ambient sound remaining at given position in a given situation, when the specific sound source is suppressed to such an extent that it no longer contributes to the ambient sound.
Sound Reduction Index	<i>SRI</i>	The reduction in sound energy when transmitted through a panel or similar planar element, typically used in relation to single octave or one-third octave frequency band values.
Weighted Sound Reduction Index	$R_w$	The Sound Reduction Index expressed as a single figure, as expressed against a reference curve.
Dynamic Insertion Loss	<i>DIL</i>	Reduction in acoustic energy resulting from the insertion of a noise control element (e.g. an attenuator, acoustic enclosure etc.).
Free Field		Noise measuring location that is free from the presence of sound reflecting objects (except the ground), usually taken to mean being at least 3.5 metres distance from reflective surface(s) or greater.

## APPENDIX B

### Noise Survey Details and Summary Results

#### Location

Felthorpe, Norwich NR10 4EA

#### Dates, Times and Weather Conditions

Date	Daytime (07:00 hours – 23:00 Hours)				Nighttime (23:00 hours – 07:00 hours)			
	Temp, °C	Rain, mm/h	Wind Direction	Mean Wind Speed, ms <sup>-1</sup>	Temp, °C	Rain, mm/h	Wind Direction	Mean Wind Speed, ms <sup>-1</sup>
17/07/25	25	0	N	1.5	21	0	N	1.8
18/07/25	26	0	E	1.2	25	0	N	1.2
19/07/25	20	0.3	N	1.6	20	0	S	0.7
20/07/25	19	0.2	N	1.6	19	0	N	1.8
21/07/25	18	3	SW	1.9	18	0	S	1
22/07/25	22	0	S	1.7	20	0	S	1.1
23/07/25	18	0.1	S	1.6	20	0	SW	2.1
24/07/25	0	0	N	0	-	-	-	-

#### Personnel

Victoria Abrahams – Sol Acoustics

#### Instrumentation

##### *Measurement Position 1*

- 01dB Cube Sound level meter (serial no. 11495)
- 01dB Pre22 Microphone preamplifier (serial no. 1805327)
- GRAS 40CD Microphone capsule (serial no. 331753)
- 01dB Cal21 acoustic calibrator (serial no. 34675320)

##### *Measurement Position 2*

- 01dB Cube Sound level meter (serial no. 11228)
- 01dB Pre22 Microphone preamplifier (serial no. 1610782)
- GRAS 40CD Microphone capsule (serial no. 287832)
- 01dB Cal21 acoustic calibrator (serial no. 34675320)
- Vaisala WXT520 Weather Station

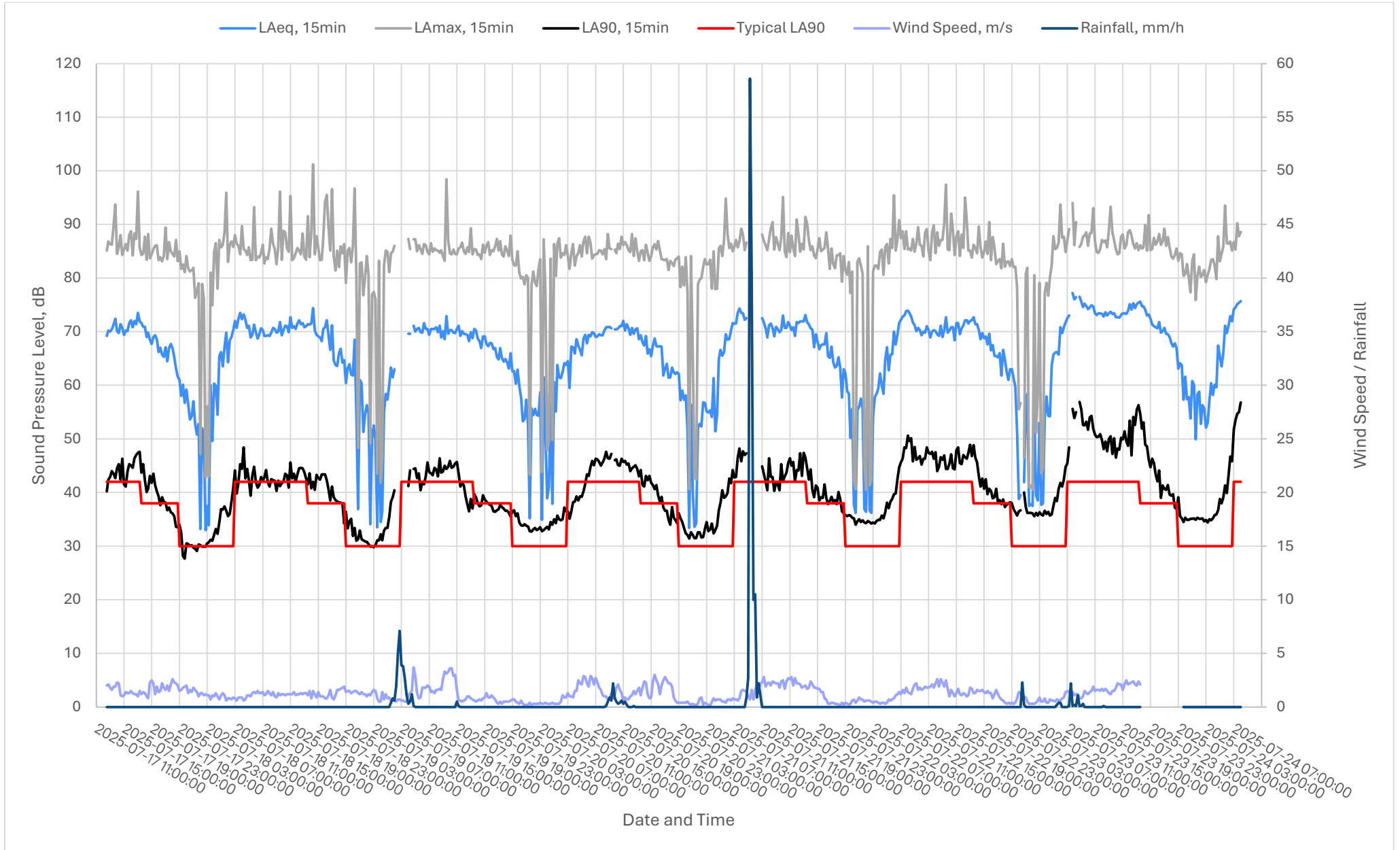
## Methodology

Before and after the measurements the noise monitoring equipment was calibrated to an accuracy of  $\pm 0.1\text{dB}$  using the Cal 21 Calibrator. The calibrator produces a sound pressure level of  $94\text{dB re } 2 \times 10^{-5} \text{ Pa @ } 1\text{kHz}$ .

## Measurement Results

Graphs B1 and B2 summarise the broadband A-weighted results obtained at Measurement Position 1 and 2 respectively.





Graph B2: A-weighted environmental noise levels at Measurement Position 2, 17 July to 24 July 2025

## APPENDIX C

### Site Plan Indicating the Location of the Noise Sources

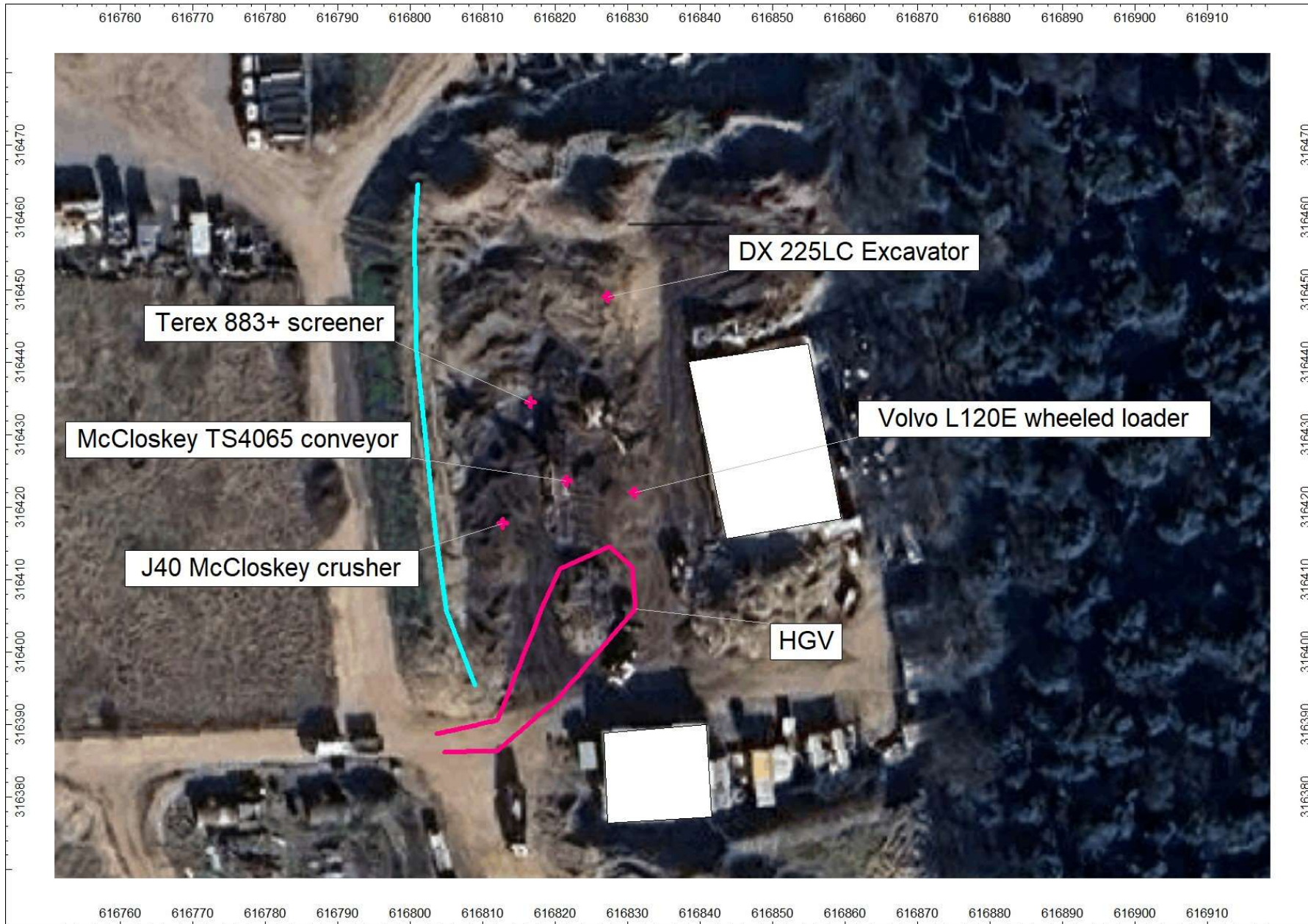
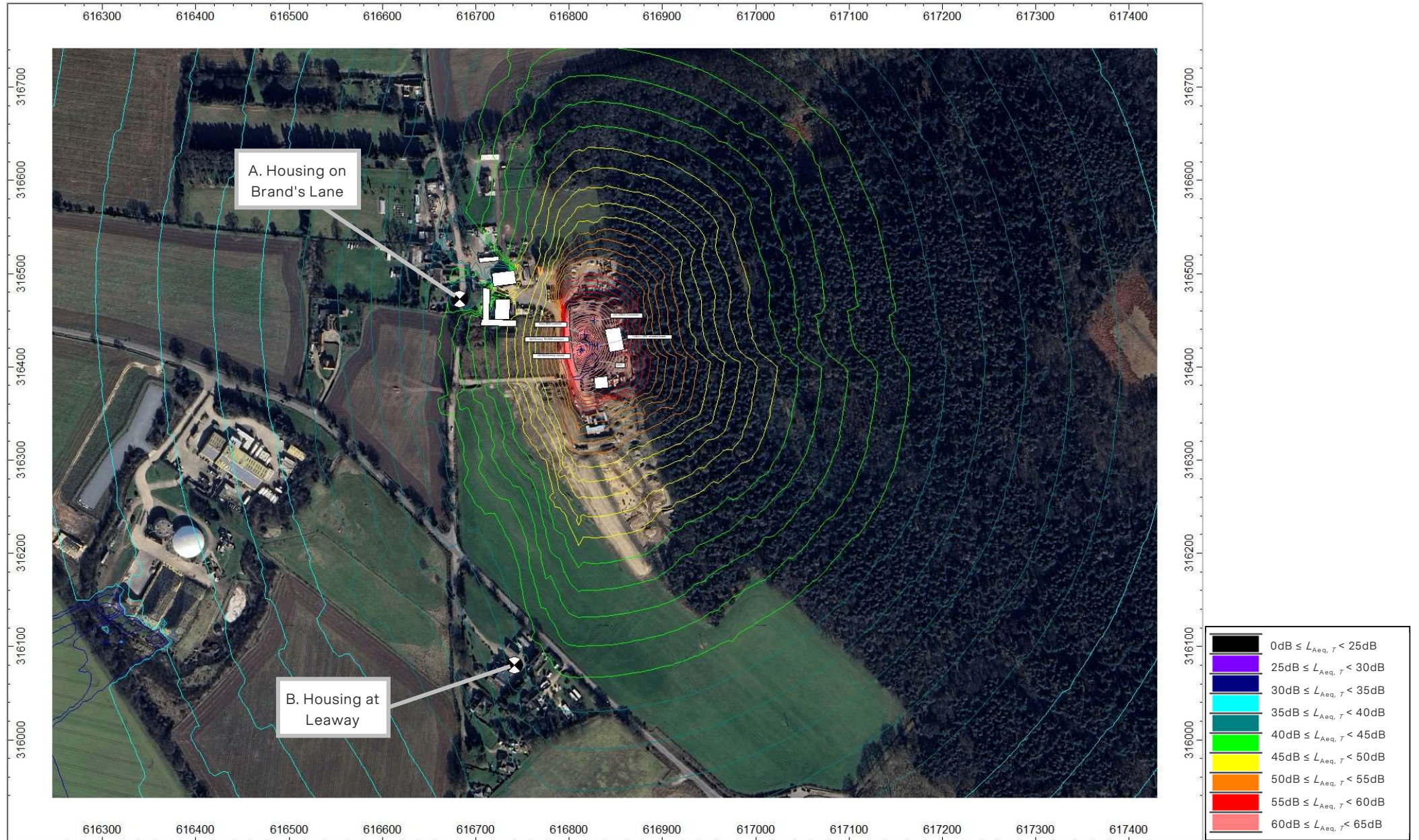


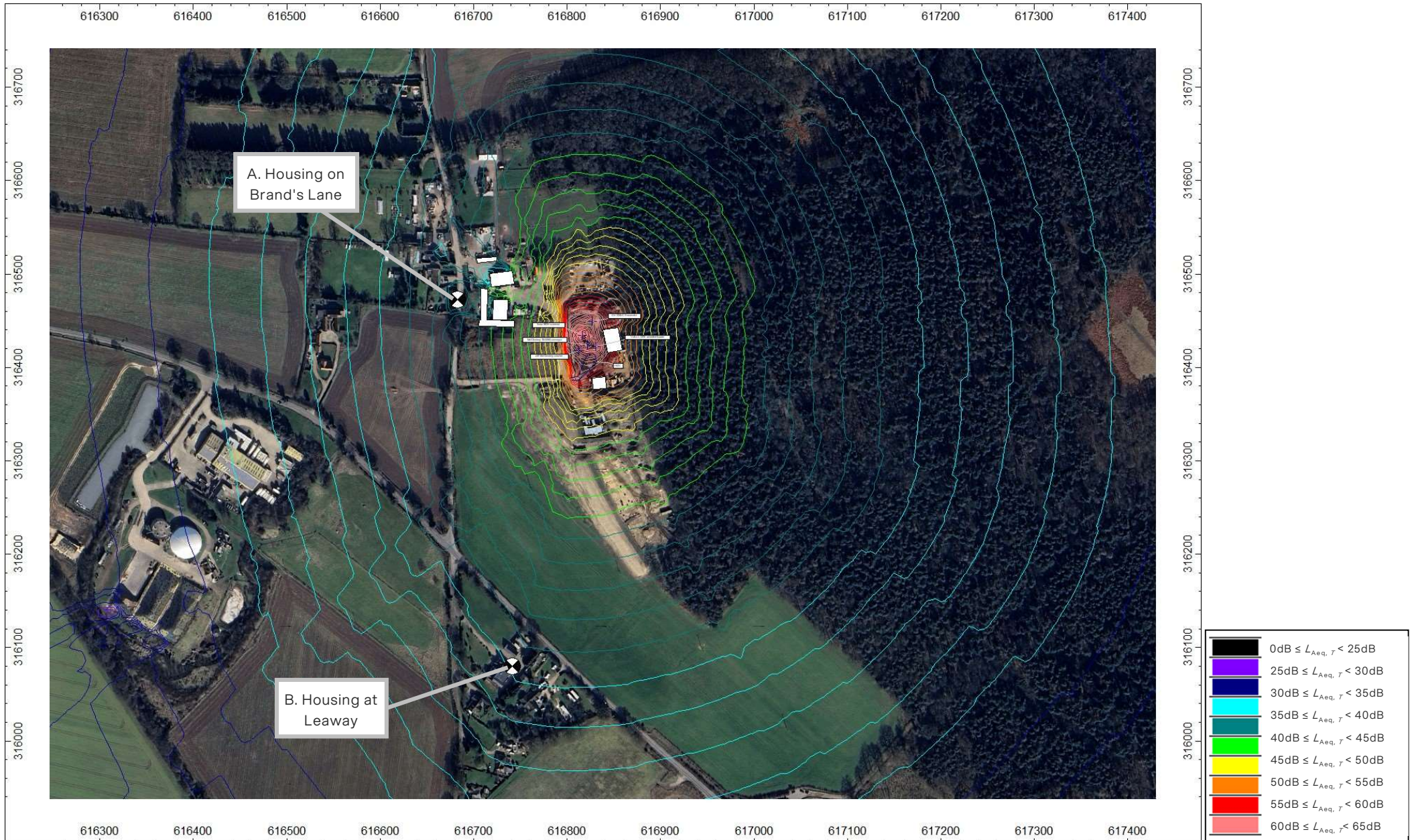
Figure C1: Site plan indicating grid coordinate references x, y coordinates for all external modelled noise sources (Google 2025)

## APPENDIX D

# Environmental Noise Modelling Results



**Figure D1:** Predicted daytime Specific Sound Level,  $L_{Aeq,1hour}$  at 4 metres grid height (Google 2025), Crusher operating



**Figure D2:** Predicted daytime Specific Sound Level,  $L_{Aeq,1hour}$  at 4 metres grid height (Google 2025), Crusher not operational

A. Brand's Lane	
Source Description	Specific Sound Level, dB $L_{Aeq, T}$
J40 McCloskey crusher	39.3
Terex 883+ screener	36.1
McCloskey TS4065 conveyor	34.6
DX 225LC Excavator	30.2
Volvo L120E wheeled loader	27.6
HGV	25.5
<b>Total</b>	<b>42.4</b>

**Table D1:** A. Brand's Lane  
 Specific Sound Levels

B. Leaway	
Source Description	Specific Sound Level, dB $L_{Aeq, T}$
J40 McCloskey crusher	41.6
Terex 883+ screener	36.5
McCloskey TS4065 conveyor	33.7
DX 225LC Excavator	28.3
Volvo L120E wheeled loader	27.6
HGV	23.3
<b>Total</b>	<b>43.6</b>

**Table D2:** B. Leaway  
 Specific Sound Levels

## APPENDIX E

### Noise Source Schedule

Equipment Name	Data Source / Specification	Data Type	Number of Sources	Average Sound Pressure Level, dB, at Octave Band Centre Frequency Hz									Average Sound Pressure Level on Measurement Surface, $L_{pA}$	Measurement Distance, m	Overall Sound Power Level, dB $L_{wA}$	Utilisation		Source: Area (A) Line (L) Point (P) or internal (I)	Outline Noise Mitigation Design
				32	63	125	250	500	1k	2k	4k	8k				Daytime (07:30 - 17:30)	Any other time		
J40 McCloskey crusher	On site measurement during 17 July 2025	Sound Pressure Level at 10m distance	1	78	83	85	83	80	76	73	69	60	82	10	110	100%	0%	P	
	On site measurement during 17 July 2025	Sound Pressure Level at 1m distance		82	87	94	93	89	85	82	78	71	91	1	111				
McCloskey TS4065 conveyor	On site measurement during 17 July 2025	Sound Pressure Level at 1m distance	1	70	100	84	79	80	76	75	70	63	83	1	105	100%	0%	P	
	On site measurement during 17 July 2025	Sound Pressure Level at 10m distance		67	89	76	73	64	63	58	53	44	70	10	98				
DX 225LC Excavator	On site measurement during 17 July 2025	Sound Pressure Level at 10m distance	1	86	84	68	65	60	56	53	49	41	64	10	92	100%	0%	P	
Volvo L120E wheeled loader	On site measurement during 17 July 2025	Sound Pressure Level at 10m distance	1	81	71	70	65	62	60	58	55	49	66	10	94	100%	0%	P	
Terex 883+ screener	On site measurement during 17 July 2025	Sound Pressure Level at 10m distance	1	73	79	77	77	74	69	67	61	56	75	10	103	100%	0%	P	
	On site measurement during 17 July 2025	Sound Pressure Level at 1m distance		82	85	84	86	83	77	75	70	65	84	1	110				
HGV	Noise spectrum taken from BS5228 Table C.2 reference 34 ("Lorry": 4-axle wagon).	Sound Pressure Level at 10m distance	1		73	78	78	78	74	73	68	66	80	10	108	4/hour	nil	L	Deliveries to and from the Facility must only take place between 07:00 – 19:00 hours during Monday to Sunday (excluding bank holidays) only.

**Table E1:** Noise source schedule (stated plant noise levels should not be exceeded)

## APPENDIX F

# Details and Professional Qualifications of Contributing Sol Staff

### Company Details

**Name of Organisation:** Sol Acoustics Limited

**Status:** Private Limited Company

**Address:** Unit 11, Brunel Court,  
Gadbrook Park  
CW9 7LP

**Telephone Number:** 01565 632535

**E-Mail:** [info@solacoustics.co.uk](mailto:info@solacoustics.co.uk)

**Nature of Business:** Acoustic Consultancy

**Directors:** Simon Ferenczi

**Company Registration Number:** 4218702

### Key Technical Personnel & Qualifications

Simon Ferenczi	Institute of Acoustics Diploma (with additional modules), MIOA
Brian Horner	BSc (Hons), MIOA

### Company Accreditations

Sol Acoustics is a member of The Association of Noise Consultants (ANC) and is qualified to perform sound insulation testing under the ANC's accredited testing scheme to demonstrate compliance with the requirements of Approved Document E of the Building Regulations.



## **Appendix 2**

### Inspection Checklist

**Form No. 3.3a Inspection Checklists**

**V.1, June 2025**

<b>Daily Inspection Checklists</b>				
<b>Item for Visual Inspection</b>	<b>Aspects for Inspection</b>	<b>Checked?</b>	<b>Remedial Action Required?</b>	<b>Action Form Completed</b>
Litter	Within tipping area			
	Within storage area			
	Outside perimeter of Site boundary			
	Check around where refueling takes place for evidence of leakage			
Fire	Fire extinguishers in place and no obvious damage			
	Soil / sand available to aid in firefighting			
	Spill kits in place on the southeast side of the Site.			
Dust emissions	No excessive dust emissions should be escaping the Site boundary			
	Water bowsers and hoses are in good condition and are operational.			
	Spray bar in crusher operational and has water supply			
Roads	Public highway clear of mud tracked out from the Site			
Weather	Please describe (temperature, wind speed, wind direction, dry/wet)			
Plant and Equipment	Plant and equipment is mechanically sound for use (e.g. no black fumes, trailing liquids)			
	All plant and equipment is powered down at the end of the day.			

**Form No. 3.3a Inspection Checklists**

**V.1, June 2025**

Weekly Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed
Site Security	The gates to the Site are in working order and lockable			
Stockpiles	Height of all stockpiles under 5 metres			
	Volume of stockpiles of waste are contained within the storage area			

Date: \_\_\_\_\_

Completed by: \_\_\_\_\_

Signature: \_\_\_\_\_

**Form No. 3.3a Inspection Checklists**

**V.1, June 2025**

Monthly Inspection Checklists				
Item for Visual Inspection	Aspects for Inspection	Checked?	Remedial Action Required?	Action Form Completed
Roads	Access roads free from ruts / potholes.			

Date: \_\_\_\_\_

Completed by: \_\_\_\_\_

Signature: \_\_\_\_\_

**Form No. 3.3a Inspection Checklists**

**V.1, June 2025**

<b>Annual Inspection Checklists</b>				
<b>Item for Visual Inspection</b>	<b>Aspects for Inspection</b>	<b>Checked?</b>	<b>Remedial Action Required?</b>	<b>Action Form Completed</b>

Date: \_\_\_\_\_

Completed by: \_\_\_\_\_

Signature: \_\_\_\_\_



## **Appendix 3**

### Complaint Form

**Form No. 6.1c Complaints Form**

**V.1, June 2025**

Who made the complaint?	Name:	
	Address:	
	Phone No.:	
Date and time they made the complaint:		
What happened? What was it about?		
Was anyone else aware of this – other neighbours or your staff? If so, who?		
Did the complaint relate to your site? If so, what happened? What went wrong?		
What have you done to make sure that it does not happen again?		
Was there any significant pollution – for example: dust, odour or noise outside the Site or spillage of polluting liquids onto the ground, into a drain or a watercourse?		
If there was, then you must notify the Environment Agency on 0800 807060 and any other relevant regulators.  Have you done so?    Yes <input type="checkbox"/> No <input type="checkbox"/>	At what time did you phone?	
You must also write or send an email to confirm this to your local Environment Agency office.  Have you done so?    Yes <input type="checkbox"/> No <input type="checkbox"/>	What date did you contact?	
Please print and sign your name:		